C. 1.1.1: The Institution ensures effective curriculum delivery through a well-planned and documented process:

Supporting Documents:

Index

Sl No.	Academic Year	Particulars
1	2022-23 (Odd Sem)	Course file 1. Lesson Plan 2. Assignment Questions with Scheme 3. IA question Paper with Scheme (both sets) 4. All IA marks and final AVG marks 5. Slow Learners and Remedial class 6. Advanced Learners Challenging Questions 7. Pedagogy Report and Proofs (Proof of usage of ICT Tools) 8. Question Bank for each Module 9. Previous year VTU Question papers, Scheme for evaluation 10. VTU Results (Detailed Analysis: Max Marks, Min Marks, Avg Marks, No. of FCD, FC, SC, Fail) 11. CO PO PSO Attainment 12. Course End Survey
2		Academic Calendar, Internal Assessment Schedule
3		Lesson Plan

KSIT BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

COURSE FILE

NAME OF THE STAFF	:	**Dr. DINESH KUMAR D S**
SUBJECT CODE/NAME	:	**18EC71-COMPUTER NETWORKS**
SEMESTER/YEAR	:	**VII/IV**
ACADEMIC YEAR	:	**2022 – 2023**
BRANCH	:	**ECE**

COURSE IN-CHARGE

HOD

K.S. INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

VISION:

"To achieve excellence in academics and research in Electronics & Communication Engineering to meet societal need".

MISSION:

- To impart quality technical education with the relevant technologies to produce industry ready engineers with ethical values.
- To enrich experiential learning through active involvement in professional clubs &societies.
- To promote industry-institute collaborations for research &development.

K. S. INSTITUTE OF TECHNOLOGY

VISION

" To impart quality technical education with ethical values, employable skills and research to achieve excellence".

MISSION

- To attract and retain highly qualified, experienced & committed faculty.
- To create relevant infrastructure.
- Network with industry & premier institutions to encourage emergence of new ideas by providing research & development facilities to strive for academic excellence.
- To inculcate the professional & ethical values among young students with employable skills & knowledge acquired to transform the society.

K S INSTITUTE OF TECHNOLOGY

PROGRAM OUTCOMES (PO'S)

Engineering Graduates will be able to:

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

K.S. INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

PROGRAM EDUCATIONAL OBJECTIVES (PEO'S)

PEO1: Excel in professional career by acquiring domain knowledge.

PEO2: Motivation to pursue higher Education & research by adopting technological innovations by continuous learning through professional bodics and clubs.

PEO3: To inculcate effective communication skills, team work, ethics and leadership qualities.

PROGRAM SPECIFIC OUTCOMES (PSO'S)

PSO1: Graduate should be able to understand the fundamentals in the field of Electronics & Communication and apply the same to various areas like Signal processing, embedded systems, Communication & Semiconductor technology.

PSO2: Graduate will demonstrate the ability to design, develop solutions for Problems in Electronics & Communication Engineering using hardwarc and software tools with social concerns.

K S INSTITUTE OF TECHNOLOGY

PROGRAM OUTCOMES (PO'S)

Engineering Graduates will be able to:

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

K.S.INSTITUTE OF TECHNOLOGY
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGG.
LIST OF STUDENTS STUDYING IN VII SEMESTER
FOR THE ACADEMIC YEAR - 2022 (ODD SEMESTER)

SECTION : A

SL.NO	USN	NAME OF THE STUDENT
1	1KS19EC001	ABHILASH A S
2	1KS19EC002	ABHISHEK CHANDRESH
3	1KS19EC003	AISHWARYA BASAVARAJ KEMBAVI
4	1KS19EC004	AISHWARYA M G
5	1KS19EC005	AKSHAY KUMAR D
6	1KS19EC006	AKSHITHA
7	1KS19EC007	AMRUTA
8	1KS19EC008	AMULYA R
9	1KS19EC009	ANITHA S
10	1KS19EC010	ANJALI Y J
11	1KS19EC011	ARCHANA YADAV M
12	1KS19EC012	ASHRITHA R
13	1KS19EC014	BHAVANA S
14	1KS19EC015	CHAITRA P
15	1KS19EC016	CHANDAN RAJ Y
16	1KS19EC017	CHANDANA.L
17	1KS19EC018	CHENNREDDY RAJASEKHAR
18	1KS19EC019	CHIRANTHANA YOGANANDA K
19	1KS19EC020	D NAYAN
20	1KS19EC021	DANESH RAJU V
21	1KS19EC022	DAVINO JOSEPH
22	1KS19EC023	DHANYA SUKANTH B K
23	1KS19EC024	DHEEMANTH K N
24	1KS19EC025	DISHA SHIVANI
25	1KS19EC027	GAYATHRI P K
26	1KS19EC028	GAYATHRI R WARRIER
27	1KS19EC029	GONUGUNTLA SAI SIDDARTHA
28	1KS19EC030	GOWRI S NADIGER
29	1KS19EC031	HARSHA R
30	1KS19EC032	HARSHITHA B Y
31	1KS19EC033	HEMANTH.R.PATIL
32	1KS19EC035	JAGRUTI PAI
33	1KS19EC036	JAYANTH M B
34	1KS19EC037	KAMMA MANUBOLU MANOGNA
35	1KS19EC038	KARTHIK K
36	1KS19EC039	KASHYAP.P
37	1KS19EC040	KRUPA.A
38	1KS19EC041	KRUTHIK S
39	1KS19EC042	LAKSHMAN KUMARA B
40	1KS19EC043	LIKITHA.H
41	1KS19EC044	M LOKESHWARI
42	1KS19EC045	MANU N KANDRA
43	1KS19EC046	MEGHANA H P
44	1KS19EC047	MOHAMMAD RAKHEEB M R
45	1KS19EC048	MOHITH KUMAR G
46	1KS19EC049	MONIKA V ARYA
47	1KS19EC050	MONISHA.B.K
48	1KS19EC051	N ANILA
49	1KS19EC052	NIDHI S
50	1KS19EC053	NISARGA K
51	1KS19EC054	NITHIN D
52	1KS19EC055	PAVAN KUMAR G R
53	1KS19EC056	POKURI MOUNIKA
54	1KS19EC057	POOJA S P
55	1KS19EC058	PRADEEP GADED
56	1KS19EC059	PRAKASH CHEGORE
57	1KS19EC061	PRASHANTH.S.K
58	1KS19EC062	PRAVEEN KUMAR N
59	1KS19EC063	PREETHAM G H
60	1KS19EC064	PRIYANKA K
61	1KS19EC065	RADHA KRISHNA L
62	1KS19EC066	RAJALAKSHMI S

K.S.INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGG.

LIST OF STUDENTS STUDYING IN VII SEMESTER

FOR THE ACADEMIC YEAR - 2022 (ODD SEMESTER)

SECTION : B

SL.NO	USN	NAME OF THE STUDENT
1	1KS19EC067	RAMYASREE R
2	1KS19EC068	RANGASWAMY.U
3	1KS19EC069	ROHAN K R
4	1KS19EC070	S K BHARATESH
5	1KS19EC071	SABARISH I J
6	1KS19EC073	SAHANA S
7	1KS19EC074	SAI PRIYA T S
8	1KS19EC075	SAMIKSHA S
9	1KS19EC076	SANTOSH HEGDE
10	1KS19EC077	SATHVIK U M
11	1KS19EC078	SHAMITHA BIJOOR
12	1KS19EC079	SHASHANK KASHYAP.H.R
13	1KS19EC081	SHREYAMS D K
14	1KS19EC082	SHREYAS B ARADHYA
15	1KS19EC083	SHREYAS GOWDA
16	1KS19EC084	SHREYAS V BHARADWAJ
17	1KS19EC085	SHUBHAM KUMAR SINGH A
18	1KS19EC086	SINCHANA M N
19	1KS19EC087	SRINIVAS S
20	1KS19EC088	SRINIVASAN M
21	1KS19EC089	SRIRAM
22	1KS19EC090	SUHAS.M
23	1KS19EC092	SUMUKHA VASISHTA M R
24	1KS19EC093	SUSHMITHA S
25	1KS19EC094	SWAGATH AITHAL P G
26	1KS19EC095	SWATHI U
27	1KS19EC096	T N L RUTHVIK
28	1KS19EC097	TEJASHWINI P V
29	1KS19EC098	THEERTHANA S R
30	1KS19EC099	TUSHAR R VASISHTA
31	1KS19EC100	VAISHNAVI K
32	1KS19EC101	VANDANA G
33	1KS19EC102	VANDANA S
34	1KS19EC103	VIGNESH MUTHAIAH R
35	1KS19EC104	VIKAS S
36	1KS19EC105	VINUTH S REDDY
37	1KS19EC106	VISHAL SANJAY RAJU
38	1KS19EC107	VISHNU RAATA YADUNANDAN
39	1KS19EC108	YASHASWINI N
40	1KS18EC089	SNEHA N
41	1KS20EC400	MADALA VIVEK KUMAR
42	1KS20EC401	RANJANA P
43	1KS20EC402	SINDHU J

K.S INSTITUT E OF TECHNOLOGY, BENGALURU-560109

TENTATIVE CALENDAR OF EVENTS: VII ODD SEMESTER (2022-2023)

SESSION: SEP 2022 – DEC 2022

Week No.	Month	Day						Days	Activities
		Mon	Tue	Wed	Thu	Fri	Sat		
1	SEP	19*	20	21	22	23	24 DH	5	19*-Commencement of VII Semester
2	SEP/OCT	26	27	28	29	30	1	6	1 - Wednesday Time Table
3	OCT	3	4H	5H	6	7	8 DH	3	4-Ayudha Pooja 5- Vijaya Dasami
4	OCT	10	11	12	13	14	15 TA	6	15-Friday Time Table
5	OCT	17 T1	18 T1	19 T1	20	21	22 DH	5	
6	OCT	24 H	25	26 H	27 LT1	28LT1	29 LT1	4	24-Naraka Chaturdashi 26- Balipadyami Deepavalli
7	OCT/NOV	31	1H	2	3* FFB1	4 BV	5 DH	4	1- Kannada Rajyotsava 3* - First Faculty Feed Back
8	NOV	7 ASD	8	9	10	11H	12	5	11- Kanakadasa Jayanti 12- Tuesday Time Table
9	NOV	14	15	16	17	18 TA	19 DH	5	
10	NOV	21 T2	22 T2	23 T2	24	25	26	6	26 - Wednesday Time Table
11	NOV/DEC	28 * FFB2	29	30 BV	1	2 ASD	3 DH	5	28* -Second Faculty Feed Back
12	DEC	5	6	7	8	9	10	6	10- Tuesday Time Table
13	DEC	12	13	14	15	16	17 DH	5	
14	DEC	19	20	21 TA	22 T3	23 T3	24 T3	6	
15	DEC	26	27	28 T3	29 LT2	30 LT2	31*	6	31-Monday Time Table 31 - Last Working day
Total No of Working Days : 77									

Total Number of working days (Excluding holidays and Tests)=62

H	Holiday
BV	Blue Book Verification
T1,T2,T3	Tests 1,2, 3
ASD	Attendance & Semisnal Display
DH	Declared Holiday
LT	Lab Test
TA	Test attendance

Monday	13
Tuesday	13
Wednesday	12
Thursday	12
Friday	12
Total	**62**

22/08/22

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K. S INSTITUTE OF TECHNOLOGY, BENGALURU-560109

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

TENTATIVE CALENDAR OF EVENTS: VII ODD SEMESTER (2022-2023)

SESSION: SEP 2022 – DEC 2022

Week No.	Month	Day						Days	Activities	Department Activities Tentative Dates	Budget (RS.)
		Mon	Tue	Wed	Thu	Fri	Sat				
1	SEP	19*	20	21	22	23	24 DH	5	19*-Commencement of VII Semester		
2	SEP/ OCT	26	27	28	29	30	1	6	1 - Wednesday Time Table	Sep 26th to 30th - FDP Under IEEE, IEI, IETE & ISTE	27000
3	OCT	3	4H	5H	6	7	8 DH	3	4-Ayudha Pooja 5- Vijaya Dasami		
4	OCT	10	11	12	13	14	15 TA	6	15-Friday Time Table	Oct. 10th &11th Workshop Under Anthariksh Oct 15th - IEEE day	15000
5	OCT	17 T1	18 T1	19 T1	20	21	22 DH	5		Oct21st - Industrial Visit for 7th sem	500
6	OCT	24 H	25	26 H	27 LT1	28 LT1	29 LT1	4	24-Naraka Chaturdashi 26- Balipadyami Deepavalli		
7	OCT/ NOV	31	1 H	2	3* FFB1	4 BV	5 DH	4	1- Kannada Rajyotsava 3* - First Faculty Feed Back	Nov. 2nd - Industrial Visit for 5th sem	500
8	NOV	7 ASD	8	9	10	11H	12	5	11- Kanakadasa Jayanti 12- Tuesday Time Table	Nov. 8th Self Happines & Resilience Nov. 12th - FDP on "Patent Search and Analysis" for students & staff.	5000
9	NOV	14	15	16	17	18 TA	19 DH	5		Nov. 15 - IEEE Awareness for 1st year students Nov. 16th - Talk Under ASH/IEEE-WIE for 5th & 7th sem Nov.17th -Talk on Entrepreneurship development Skill Under ISTE	7000
10	NOV	21 T2	22 T2	23 T2	24	25	26	6	26 - Wednesday Time Table	Nov. 24,25&26th -3 days "Hands-on Workshop on Embedded system Design using Raspberry pico" for students	10000
11	NOV/ DEC	28 * FFB2	29	30 BV	1	2 ASD	3 DH	5	28* -Second Faculty Feed Back	Nov. 28th & 29th AICTE Activity	1000
12	DEC	5	6	7	8	9	10	6	10- Tuesday Time Table	Dec.8th & 9th - Workshop for 3rd & 5th sem students Under Garut AeroModeling Club Dec. 10th - Guest Lecture on "Addressing challenges in research publications" for students & Staff	8000
13	DEC	12	13	14	15	16	17 DH	5		Dec. 12th- Motivational Talk Under ISTE	3000
14	DEC	19	20	21 TA	22 T3	23 T3	24 T3	6		Dec. 24th- Indusrial Visit for 3rd sem	500
15	DEC	26	27	28 LT2	29 LT2	30 LT2	31*	6	31-Monday Time Table 31 - Last Working day	Dec. 30th- Carrier Guidance	3000
Total No of Working Days : 77											

Total Number of working days (Excluding holidays and Tests)=62

H	Holiday
BV	Blue Book Verification
T1,T2, T3	Tests 1,2, 3
ASD	Attendance & Sessional Display
DH	Declared Holiday
LT	Lab Test
TA	Test attendance

Monday	13
Tuesday	13
Wednesday	12
Thursday	12
Friday	12
Total	62

HEAD OF THE DEPARTMENT
Dept. of Electronics & Communication Engg
K.S. Institute of Technology
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K.S. INSTITUTE OF TECHNOLOGY, BANGALORE -109
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
VII SEMESTER TIME TABLE FOR THE YEAR 2022 (ODD SEMESTER)

W.E.F. : 19/9/2022

SEC : 'B'

CLASS TEACHER : Mr. Aswini Kumar G

CLASS ROOM : OB LH 311

PERIOD	1	2	10.20 AM 10.35 AM	3	4	12.25 PM 1.15 PM	5	6	7
TIME DAY	8.30 AM 9.25 AM	9.25 AM 10.20 AM		10.35 AM 11.30 AM	11.30 AM 12.25 PM		1.15 PM 2.10 PM	2.10 PM 3.05 PM	3.05 PM 4.00 PM
MON	E&E (18ME751)	CRYPTO (18EC744)	TEA BREAK	VLSI (18EC72)	SC (18EC732)	LUNCH BREAK	← Project Work Phase - 1 (18ECP78) →		
TUE	E&E (18ME751)	CRYPTO (18EC744)		VLSI (18EC72)	CN (18EC71)		← CN LAB (18ECL76) -B2 / VLSI LAB (18ECL77) -B1 →		
WED	CN (18EC71)	CRYPTO (18EC744)		SC (18EC732)	VLSI (18EC72)		E&E (18ME751)	CRYPTO (18EC744)-(T)	
THU	CRYPTO (18EC744)	SC (18EC732)		E&E (18ME751)	CN (18EC71)		← CN LAB (18ECL76) -B3 / VLSI LAB (18ECL77) -B2 →		
FRI	← CN LAB (18ECL76) -B1 / VLSI LAB (18ECL77) -B3 →				VLSI (18EC72)		CN (18EC71)	SC (18EC732)	

Sub-Code	Subject Name	Faculty Name
18EC71	Computer Networks	Dr. Dinesh Kumar D S
18EC72	VLSI Design	Mr. Aswini Kumar G
18EC732	Satellite Communication Professional Elective - 2	Mrs. Pooja S
18EC744	Cryptography Professional Elective - 3	Dr. P.N Sudha
18ME751	Energy and Environment Open Elective -B	Dr. B Surekha
18ECL76	Computer Networks Lab	Mr. Saleem S Tevaramani, Mr. Praveen.A.
18ECL77	VLSI Laboratory	Mrs. Pooja .S , Mr. Aswini Kumar G
18ECP78	Project Work Phase - 1	Dr. B.Sudharshan, Dr. Rekha N
	Internship	Mr. Santhosh Kumar B R

Time Table Co-ordinator

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K.S. INSTITUTE OF TECHNOLOGY, BANGALORE -109
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
INDIVIDUAL TIME TABLE FOR THE YEAR - 2022 (ODD SEMESTER)

W.E.F. : 19/9/2022

NAME OF THE FACULTY : Dr. DINESH KUMAR D S

DESIGNATION: ASSOCIATE PROFESSOR

PERIOD	1	2	10.20 AM 10.35 AM	3	4	12.25 PM 1.15 PM	5	6	7
TIME / DAY	8.30 AM 9.25 AM	9.25 AM 10.20 AM		10.35 AM 11.30 AM	11.30 AM 12.25 PM		1.15 PM 2.10 PM	2.10 PM 3.05 PM	3.05 PM 4.00 PM
MON		CN (18EC71) -A	TEA B			LUNCH BREAK	← CN LAB (18ECL76) -A2 →		
TUE		CN (18EC71) -A			CN (18EC71) -B		← WC LAB (18TEL76) →		
WED	CN (18EC71)/- B						← CN LAB (18ECL76) -A3 →		
THU	← CN LAB (18ECL76) -A1 →				CN (18EC71) - B			CN (18EC71) -A	
FRI			RE	CN (18EC71) -A			CN (18EC71) -B		

	Subject Code	Subject Name	Sem	Section	Work Load
Subject 1	18EC71	Computer Networks	VII	A&B	8
Lab -1	18ECL76	Computer NetworksLab	VII	3	9
Lab -2	18TEL76	Wireless Communication Laboratory	VII (TC)	1	3
Project	18ECP78	Project Work Phase - 1	VII		2
ADDITIONAL WORK: MENTORING AND OTHERS					
TOTAL LOAD= 22 Hrs/Week					

Time Table Co-ordinator

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K.S. INSTITUTE OF TECHNOLOGY, BANGALORE -109
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
VII SEMESTER TIME TABLE FOR THE YEAR 2022 (ODD SEMESTER)

W.E.F. : 19/9/2022
SEC : 'A'

CLASS TEACHER : Mrs. Pooja S
CLASS ROOM : OB LH 310

PERIOD	1	2	10.20 AM 10.35 AM	3	4	12.25 PM 1.15 PM	5	6	7
TIME DAY	8.30 AM 9.25 AM	9.25 AM 10.20 AM		10.35 AM 11.30 AM	11.30 AM 12.25 PM		1.15 PM 2.10 PM	2.10 PM 3.05 PM	3.05 PM 4.00 PM
MON	CRYPTO (18EC744)	CN (18EC71)	T E A	E&E (18ME751)	VLSI (18EC72)	L U N C H	← CN LAB (18ECL76) -A2 / VLSI LAB (18ECL77) -A1 →		
TUE	CRYPTO (18EC744)	CN (18EC71)		SC (18EC732)	VLSI (18EC72)		← Project Work Phase - 1 (18ECP78) →		
WED	SC (18EC732)	VLSI (18EC72)	B R E	CRYPTO (18EC744)	E&E (18ME751)		← CN LAB (18ECL76) -A3 / VLSI LAB (18ECL77) -A2 →		
THU	← CN LAB (18ECL76) -A1 / VLSI LAB (18ECL77) -A3 →				SC (18EC732)	B R E	E&E (18ME751)	CN (18EC71)	
FRI	CRYPTO (18EC744)	E&E (18ME751)	A K	CN (18EC71)	SC (18EC732)	A K	VLSI (18EC72)	CRYPTO (18EC744) (T)	

Sub-Code	Subject Name	Faculty Name
18EC71	Computer Networks	Dr. Dinesh Kumar D S
18EC72	VLSI Design	Mr. Praveen.A.
18EC732	Satellite Communication Professional Elective - 2	Mrs. Pooja S
18EC744	Cryptography Professional Elective - 3	Dr. P.N Sudha
18ME751	Energy and Environment Open Elective -B	Dr. B Surekha
18ECL76	Computer Networks Lab	Mr. Saleem S Tevaramani, Dr. Dinesh Kumar D S
18ECL77	VLSI Laboratory	Mr. Praveen.A, Mr. Aswini Kumar G
18ECP78	Project Work Phase - 1	Dr. B.Sudharshan, Dr. Rekha N
	Internship	Mr. Santhosh Kumar B R

Time Table Co-ordinator

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SEMESTER – VII
COMPUTER NETWORKS

Course Code	: 18EC71	CIE Marks	: 40
Lecture Hours/Week	: 3	SEE Marks	: 60
Total Number of Lecture Hours : 40 (08 Hrs/module)		Exam Hours	: 03
CREDITS – 03			

Course Learning Objectives: This course will enable students to:

- Understand the layering architecture of OSI reference model and TCP/IP protocol suite.
- Understand the protocols associated with each layer.
- Learn the different networking architectures and their representations.
- Learn the functions and services associated with each layer.

Module-1

Introduction: Data communication: Components, Data representation, Data flow, Networks; Network criteria, Physical Structures, Network types: LAN, WAN, Switching, The Internet.
(1.1,1.2, 1.3(1.3.1to 1.3.4 of Text)
Network Models: Protocol Layering: Scenarios, Principles, Logical Connections, TCP/IP Protocol Suite: Layered Architecture, Layers in TCP/IP suite, Description of layers, Encapsulation and Decapsulation, Addressing, Multiplexing and Demultiplexing, The OSI Model: OSI Versus TCP/IP.
(2.1, 2.2, 2.3 of Text) **L1, L2**

Module-2

Data-Link Layer: Introduction: Nodes and Links, Services, Two Categories' of link, Sublayers, Link Layer addressing: Types of addresses, ARP. Data Link Control (DLC) services: Framing, Flow and Error Control, Data Link Layer Protocols: Simple Protocol, Stop and Wait protocol, Piggybacking.
(9.1, 9.2(9.2.1, 9.2.2), 11.1, 11.2of Text)
Media Access Control: Random Access: ALOHA, CSMA, CSMA/CD, CSMA/CA.**(12.1 of Text)**
Wired and Wireless LANs: Ethernet Protocol, Standard Ethernet. Introduction to wireless LAN: Architectural Comparison, Characteristics, Access Control.
(13.1, 13.2(13.2.1 to 13.2.5), 15.1 of Text) **L1,L2, L3**

Module-3

Network Layer: Introduction, Network Layer services: Packetizing, Routing and Forwarding, Other services, Packet Switching: Datagram Approach, Virtual Circuit Approach, IPV4 Addresses: Address Space, Classful Addressing, Classless Addressing, DHCP, Network Address Resolution, Forwarding of IP Packets: Based on destination Address and Label.
(18.1, 18.2, 18.4, 18.5.1, 18.5.2 of Text)

Network Layer Protocols: Internet Protocol (IP): Datagram Format, Fragmentation, Options, Security of IPv4 Datagrams. **(19.1of Text).**

Unicast Routing: Introduction, Routing Algorithms: Distance Vector Routing, Link State Routing, Path vector routing.
(20.1, 20.2of Text) **L1,L2, L3**

Module-4

Transport Layer: Introduction: Transport Layer Services, Connectionless and Connection oriented Protocols, Transport Layer Protocols: Simple protocol, Stop and wait protocol, Go-Back-N Protocol, Selective repeat protocol. **(23.1, 23.2.1, 23.2.2, 23.2.3, 23.2.4 of Text)**

Transport-Layer Protocols in the Internet:
User Datagram Protocol: User Datagram, UDP Services, UDP Applications, Transmission Control Protocol: TCP Services, TCP Features, Segment, Connection, State Transition diagram, Windows in TCP, Flow control, Error control, TCP congestion control.
(24.2, 24.3.1, 24.3.2, 24.3.3, 24.3.4, 24.3.5, 24.3.6, 24.3.7, 24.3.8, 24.3.9 of Text) **L1,L2, L3**

Module-5

Application Layer: Introduction: providing services, Application- layer paradigms, Standard Client –Server Protocols: World wide web, Hyper Text Transfer Protocol, FTP: Two connections, Control Connection, Data Connection, Electronic Mail: Architecture, Wed Based Mail, Telnet: Local versus remote logging.Domain Name system: Name space, DNS in internet, Resolution, DNS Messages, Registrars, DDNS, security of DNS.
(25.1, 26.1, 26.2, 26.3, 26.4, 26.6 of Text) **L1, L2**

Course Outcomes: At the end of the course, the students will be able to:

1. Understand the concepts of networking.
2. Describe the various networking architectures.
3. Identify the protocols and services of different layers.
4. Distinguish the basic network configurations and standards associated with each network.
5. Analyze a simple network and measure its parameters.

Question paper pattern:

- Examination will be conducted for 100 marks with question paper containing 10 full questions, each of 20 marks.
- Each full question can have a maximum of 4 sub questions.
- There will be 2 full questions from each module covering all the topics of the module.
- Students will have to answer 5 full questions, selecting one full question from each module.
- The total marks will be proportionally reduced to 60 marks as SEE marks is 60.

TEXT BOOK:

- Behrouz A Forouzan, "Data Communications and Networking", 5th Edition, McGraw Hill, 2013, ISBN: 1-25-906475-3.

REFERENCE BOOKS:

1. James J Kurose, Keith W Ross, "Computer Networks", Pearson Education.
2. Wayne Tomasi, "Introduction to Data Communication and Networking", Pearson Education.
3. Andrew S Tanenbaum, "Computer Networks", Prentice Hall.
4. William Stallings, "Data and Computer Communications", Prentice Hall.

K S INSTITUTE OF TECHNOLOGY BANGALORE-560109

DEPARTMENT OF ELECRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Dr.Dinesh Kumar D S
SUBJECT CODE/NAME : 18EC71/COMPUTER NETWORKS
SEMESTER/YEAR/SEC : VII / A
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	Module 1					
1	Introduction: Data Communications: Components, Representations,	L+D	BB+PPT	1	1	19/09/22
2	Data Flow, Networks Physical Structures,	L+D	BB+PPT	1	2	20/09/22
3	Network Types: LAN, WAN,	L+ D	BB+PPT	1	3	22/09/22
4	Switching, Internet		BB+PPT		4	23/09/22
5	Protocol Layering: Scenarios, Principles, Logical Connections	L+ D	BB+PPT	1	5	26/09/22
6	TCP/IP Protocol Suite: Layered Architecture, Layers in TCP/IP suite.	L+D	BB+PPT	1	6	27/09/22
7	Description of layers	L+ D	BB+PPT	1	7	29/09/21
8	Encapsulation and Decapsulation, Addressing, Multiplexing and Demultiplexing,	L+AV	BB+PPT	1	8	30/09/22
9	The OSI Model: OSI Versus TCP/IP	L+D	BB+PPT	1	9	03/10/22
	Module2					
10	**Data-Link Layer:** Introduction: Nodes and Links, Services, Categories of link	L+D	BB+PPT	1	10	06/10/22
11	Sublayers, Link Layer addressing: Types of addresses	L+ D	BB+PPT	1	11	07/10/22
12	ARP	L+D	BB+PPT	1	12	10/10/22
13	**Data Link Control (DLC) services:** Framing, Flow and Error Control	L+D	BB+PPT	1	13	11/10/22
14	Data Link Layer Protocols: Simple Protocol	L+D	BB+PPT	1	14	13/10/22
15	Stop and Wait protocol, Piggybacking	L+D	BB+PPT	1	15	14/10/22
16	Media Access Control: Random Access: Pure ALOHA ,slotted ALOHA	L+ D	BB+PPT	1	16	15/10/22
17	CSMA, CSMA/CD, CSMA/CA	L+ D	BB+PPT	1	17	20/10/22
18	**Wired and Wireless LANs:** Ethernet Protocol,	L+D	BB+PPT	1	18	21/10/22

19	Standard Ethernet	L+D	BB+PPT	1	19	25/10/22
20	Introduction to wireless LAN: Architectural Comparison, Characteristics, Access Control	L+D	BB+PPT	1	20	27/10/22
	Module 3					
21	**Network Layer:** Introduction, Network Layer services: Packetizing.	L+D	BB+PPT	1	21	28/10/22
22	Routing and Forwarding, Other services	L+D	BB+PPT	1	22	31/10/22
23	Packet Switching: Datagram Approach, Virtual Circuit Approach	L+D	BB+PPT	1	23	3/11/22
24	IPV4 Addresses: Address Space, Classful Addressing	L+D	BB+PPT	1	24	4/11/22
25	Classless Addressing	L+D	BB+PPT	1	25	7/11/22
26	DHCP, Network Address Resolution		BB+PPT		26	8/11/22
27	Forwarding of IP Packets: Based on destination Address, Based and Label	L+D	BB+PPT	1	27	10/11/22
28	Network Layer Protocols: Internet Protocol (IP): Datagram Format	L+D	BB+PPT	1	28	12/11/22
29	Options, Security of IPv4 Datagrams	L+D	BB+PPT	1	29	14/11/22
30	Unicast Routing: Introduction Routing Algorithms: Distance Vector Routing	L+D	BB+PPT	1	30	15/11/22
31	Link State Routing, Path vector routing	L+D	BB+PPT	1	31	17/11/22
	Module 4					
32	**Transport Layer:** Introduction: Transport Layer Services,Connectionless and Connection oriented Protocols	L+D	BB+PPT	1	32	18/11/22
33	Transport Layer Protocols: Simple protocol	L+D	BB+PPT	1	33	24/11/22
34	Stop and wait protocol,Go-Back-N Protocol	L+D	BB+PPT	1	34	25/11/22
35	,Selective repeat protocol	L+D	BB+PPT	1	35	28/11/22
36	User Datagram Protocol: User DatagramUDP Services	L+D	BB+PPT	1	36	29/11/22
37	Transmission Control Protocol: TCP Services, Features	L+D	BB+PPT	1	37	1/12/22
38	Segments, TCP connection	L+D	BB+PPT	1	38	2/12/22
39	State Transition diagram, Windows in TCP	L+D	BB+PPT	1	39	5/12/22
40	Flow control, Error control, TCP congestion control	L+D	BB+PPT	1	40	6/12/22
	Module 5					
41	Application Layer: Introduction: providing services	L+D	BB+PPT	1	41	8/12/22
42	Application- layer paradigms,	L+D	BB+PPT	1	42	9/12/22
43	Standard Client -Server Protocols: WWW, Hyper Text Transfer Protocol,	L+D	BB+PPT	1	43	10/12/22
44	FTP: Two connections, Control Connection, Data Connection	L+D	BB+PPT	1	44	12/12/22
45	Electronic Mail: Architecture	L+D	BB+PPT	1	45	13/12/22
46	Wed Based Mail	L+D	BB+PPT	1	46	15/12/22

47	Telnet: Local versus remote logging.	L+D	BB+PPT	1	47	16/12/22
48	Domain Name system: Name space,DNS in internet,	L+D	BB+PPT	1	48	19/12/22
49	Resolution, DNS Messages	L+D	BB+PPT	1	49	20/12/22
50	Registrars, DDNS, Security of DNS	L+D	BB+PPT	1	50	26/12/22
51	Revision	L+D	BB+PPT	1	51	27/12/22
52	Revision	L+D	BB+PPT	1	52	31/12/22

TEXTBOOK:

T1: Data Communications and Networking, Forouzan, 5th Edition, McGraw Hill, 2016 ISBN: 1-25-906475-3.

REFERENCES:

R1: Computer Networks, James J Kurose, Keith W Ross, Pearson Education, 2013, ISBN: 0-273-76896.

R2: Introduction to Data Communication and Networking, WayarlesTomasi, Pearson Education, 2007, ISBN: 0130138282.

WEB MATERIALS:

W1: https://nptel.ac.in/courses/106/105/106105183/

W2: https://nptel.ac.in/courses/106/105/106105081/

W3: https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-829-computer-networks-fall-2002/lecture-notes/

Course Incharge **Module Coordinator** **HOD ECE** **Principal**

K. S. INSTITUTE OF TECHNOLOGY

#14, Raghuvanahalli, Kanakapura Main Road, Bengaluru-560109

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Course: Computer Networks	**Course Code:18EC71**	**Type: Core**
Course In Charge: Dr.Dinesh Kumar D S	**Academic year:2022-23**	

No of Hours per week

Theory (Lecture Class)	Practical/Field Work/Allied Activities	Total/Week	Total teaching hours
4	0	4	50

Marks

Internal Assessment	Examination	Total	Credits
40	60	100	3

Aim/Objective of the Course:

This Course will enable students to:

- Understand the layering architecture of OSI reference model and TCP/IP Protocol suite.
- Understand the protocols associated with each layer.
- Learn the different networking architectures and their representations.
- Learn the functions and services associated with each layer.

Course Learning Outcomes:

After completing the course, the students will be able to,

CO1	**Examine** the layering architecture of computer networks and distinguish between the OSI reference model and TCP/IP protocol suite	Analyzing (K4)
CO2	**Evaluate** different DLL protocols and **distinguish** wired and wireless LAN architecture	Analyzing (K4)
CO3	**Distinguish** classful and classless IP addresses and **analyze** different network layer routing protocols	Analyzing (K4)
CO4	**Analyze** services of TCP and UDP and **evaluate** the performance of transport layer protocols.	Analyzing (K4)
CO5	**Analyze** services of application layer and **examine** variousprotocols such as FTP,WWW,TELNET and DNS	Analyzing (K4)

Syllabus Content:

Module 1 Introduction: Data Communications: Components, Representations, Data Flow, Networks: Physical Structures, Network Types: LAN, WAN, Switching, Internet. Network Models: Protocol Layering: Scenarios, Principles, Logical Connections, TCP/IP Protocol Suite: Layered Architecture, Layers in TCP/IP suite, Description of layers, Encapsulation and Decapsulation, Addressing, Multiplexing and Demultiplexing, The OSI Model: OSI Versus TCP/IP. LO: At the end of this session the student will be able to, 1. Define the components of data communication system and its representation types. 2. Differentiate different network topologies. 3. Explain the concept of protocol layering, TCP/IP protocol suite and switching.	**CO1** **10 hrs** PO1-3 PO2-2 PO3-2 PO10 -2 PO12-2 PSO1-2 PSO2-2

4. Differentiate links and nodes	
Module 2: Data-Link Layer: Introduction: Nodes and Links, Services, Two Categories' of link, Sublayers, Link Layer addressing: Types of addresses, ARP. Data Link Control (DLC) services: Framing, Flow and Error Control, Data Link Layer Protocols: Simple Protocol, Stop and Wait protocol, Piggybacking. Media Access Control: Random Access: ALOHA, CSMA, CSMA/CD, CSMA/CA Wired and Wireless LANs: Ethernet Protocol, Standard Ethernet. Introduction to wireless LAN: Architectural Comparison, Characteristics, Access Control LO: At the end of this session the student will be able to, 1.Explain link layer addressing and protocols 2. Describe different random access and controlled access protocols of LAN and WAN. 3. Explain LLC and MAC layers of LAN and Ethernet standards and protocols 4. Explain MAC sublayers of wireless LAN.	**CO2** **10 hrs** PO1-3 PO2-3 PO3-3 PO4-2 PO9 -3 PO10 -2 PO11-2 PO12-2 PSO1-3 PSO2-2
Module 3: Network Layer: Introduction, Network Layer services: Packetizing, Routing and Forwarding, Other services, Packet Switching: Datagram Approach, Virtual Circuit Approach, IPV4 Addresses: Address Space, Classful Addressing, Classless Addressing, DHCP, Network Address Resolution, Forwarding of IP Packets: Based on destination Address and Label. Network Layer Protocols: Internet Protocol (IP): Datagram Format, Fragmentation, Options, Security of IPv4 Datagrams. Unicast Routing: Introduction, Routing Algorithms: Distance Vector Routing, Link State Routing, Path vector routing. LO: At the end of this session the student will be able to, 1. Describe Packetizing, Routing and Forwarding and other network layer services. 2. Describe IPv4 protocol and datagrams 3. Explain the importance of Unicast routing.	**CO3** **10 hrs** PO1-3 PO2-3 PO3-3 PO4-3 PO9 -3 PO10 -2 PO11-2 PO12-2 PSO1-3 PSO2-2
Module 4: Transport Layer: Introduction: Transport Layer Services, Connectionless and Connection oriented Protocols, Transport Layer Protocols: Simple protocol, Stop and wait protocol, Go-Back-N Protocol, Selective repeat protocol. (23.1, 23.2.1, 23.2.2, 23.2.3, 23.2.4 of Text) Transport-Layer Protocols in the Internet: User Datagram Protocol: User Datagram, UDP Services, UDP Applications, Transmission Control Protocol: TCP Services, TCP Features, Segment, Connection, State Transition diagram, Windows in TCP, Flow control, Error control, TCP congestion control. LO: At the end of this session the student will be able to, 1. Explain Connectionless and Connection oriented Protocols. 2. Explain UDP and TCP 3. Differentiate flow and congestion control.	**CO4** **10 hrs** PO1-3 PO2-3 PO3-3 PO4-2 PO9 -3 PO10 -2 PO11-2 PO12-2 PSO1-3 PSO2-2

Module 5:	**CO5** **10 hrs**
Application Layer: Introduction: providing services, Application- layer paradigms, Standard Client -Server Protocols: World wide web, Hyper Text Transfer Protocol, FTP: Two connections, Control Connection, Data Connection, Electronic Mail: Architecture, Wed Based Mail, Telnet: Local versus remote logging. Domain Name system: Name space, DNS in internet, Resolution, DNS Messages, Registrars, DDNS, security of DNS LO: At the end of this session the student will be able to, 1. Explain standard application layer Protocols like HTTP, FTP, DNS 2. Explain Email architecture 3. Explain the role of DNS in Internet.	PO1-3 PO2-2 PO3-2 PO10 -2 PO11-2 PO12-2 PSO1-3 PSO2-2

Textbooks: -

1. Behrouz A Forouzan, Data Communications and Networking, 5th Edition, McGraw Hill, 2013, ISBN: 1-25906475-3.

Reference Books:

1. Computer Networks, James J Kurose, Keith W Ross, Pearson Education, 2013, ISBN: 0-273-76896.
2. Introduction to Data Communication and Networking, Wayne Tomasi, Pearson Education, 2007, ISBN: 0130138282.
3. Andrew S Tanenbaum, "Computer Networks", Prentice Hall.
4. William Stallings, "Data and Computer Communications", Prentice Hall

Useful Websites

1. https://www.ciena.com/insights/acronym-guide/
2. https://www.techopedia.com/

Useful Journals

1. Computer Networks, The International Journal of Computer and Telecommunications Networking, Elsevier
2. Journal of Network and Systems Management, Springer
3. Computer networks and communications, IEEE

Teaching and Learning Methods:

1. Lecture class: 40 hrs.
2. Self-study: 5hrs.
3. Field visits/Group Discussions/Seminars: 5hrs.
4. Practical classes: 0hrs.

Type of test/examination: Written examination:
Continuous Internal Evaluation(CIE) : 20 marks (Average of best two of total three tests will be considered)
Semester End Exam(SEE) : 80 marks (students have to answer all main questions)
Test duration: 1 :30 hr
Examination duration: 3 hrs
Semester End Exam(SEE) : 60 marks (students have to answer all main questions)
Test duration: 1 :30 hr
Examination duration: 3 hrs

CO - PO MAPPING

PO1: Science and engineering Knowledge **PO2:** Problem Analysis **PO3:** Design & Development **PO4:**Investigations of Complex Problems **PO5:** Modern Tool Usage **PO6:** Engineer & Society	**PO7:**Environment and Sustainability **PO8:**Ethics **PO9:**Individual & Team Work **PO10:** Communication **PO11:**Project Management & Finance **PO12:**Life long Learning

PSO1: Ability to understand basic concepts, analyze subsystems/modules and apply them in various fields like signal processing, networking and communication.

PSO2: Should be able to associate the learning, understand the published literature and project work effectively.

CO PO Mapping details for Computer Networks

CO 18EC71	Bloom's Level	PO1	PO2	PO3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO11	PO12	PSO1	PSO2
18EC71.1	K3	3	2	2	-	-	-	-	-	-	2	-	2	2	2
18EC71.2	K4	3	3	3	2	-	-	-	-	3	2	2	2	3	2
18EC71.3	K4	3	3	3	3	-	-	-	-	3	2	2	2	3	2
18EC71.4	K4	3	3	3	3	-	-	-	-	3	2	2	2	3	2
18EC71.5	K4	3	2	2	-	-	-	-	-	-	2	2	2	3	2
18EC71		3	2.6	2.6	2.7	-	-	-	-	-	-	-	-	2.8	2
Content Beyond Syllabus(CBS)		-	-	-	-	-	-	-	-	3	2	2	2	-	-
18EC71		3	2.8	2.8	3	-	-	-	-	3	2	2	2	2.8	2

CO PO mapping for the events conducted after gap identification

Sl. No.	Gap Identification	Activity Planned to fill the gap	CO	Relevant PO Mapping
1	PO4- PO12	Literature Survey	CO1, CO2, CO3, CO4, CO5	PO4,PO9, PO10,PO11, PO12

CO-POMAPPINGJustificationTable				
Sl No.	CO	PO	Number Of Key Elements of PO Mapped To CO	Justification
CO1: Examine the layering architecture of computer networks and distinguish between the OSI reference model and TCP/IP protocol suite.				
1.	**CO1**	1	**The students will be able to gain** • KnowledgeOfMathematics • KnowledgeIn Specific Engg. Problem & To Find Solution	3 Keywords Are Mapped Hence Strength Is **3**
2.		2	**The students will be able to** • Identify • Formulate • AnalyseComplexEngineeringProblems	2
3.		3	**The students will be able to** • DesignSolutions for data communication • DesignSolutions for Cultural & Societal Issues. • DesignSolutions for Environmental Considerations	2
4.		9	**The students will be able to work effectively in multidisciplinary as** • Individual • In a Team	3
5.		10	**The students will able to Communicate effectively by** • **Write Effective Reports** **Effective Presentations**	2
6.		11	**The students will be able to gain the knowledge and understand** • Engineering principles • Management of projects in a team	2
7		12	**The students will be able to engage in knowledge upgradation through** • Independent learning • Lifelong learning	2
8		PSO1	**The students will be able to understand the fundamentals of ECE in** • Communication • Networking	2
9		PSO2	**The students will be able to gain the knowledge to** • Design a tool for societal concern • Develop solutions for hardware/software tools	2
CO2: Evaluate different DLL protocols and **distinguish** wired and wireless LAN architecture				
10	**CO2**	1	**The students will be able to gain the** • KnowledgeOfMathematics • KnowledgeOfScience, • KnowledgeIn Specific Engg. Problem & To Find Solution	3
11		2	**The students will be able to** • Identify • Formulate • AnalyseComplexEngineeringProblems	3
12		3	**The students will be able to** • **Design**solutions for public health & safety • **Design**solutions for environmental considerations	3

13		4	**The students will be able to** • Design of solution for complex problems • Analysis of problems • Synthesis of solution for complex problems	3
14		9	**The students will be able to work effectively in multidisciplinary as** • Individual • In a Team	3
15		10	**The students will able to Communicate effectively by** • **Write Effective Reports** **Effective Presentations**	2
16		11	**The students will be able to gain the knowledge and understand** • Engineering principles Management of projects in a team	2
17		12	**The students will be able to engage in knowledge upgradation through** • Independent learning Lifelong learning	2
18		PSO1	**The students will be able to gain the knowledge in the fundamentals of ECE in** • Communication • Networking	3
19		PSO2	**The students will have the ability to** • Design a tool for societal concern • Develop solutions for hardware/software tools	2
CO3:**Distinguish** classful and classless IP addresses and **analyze** different network layer routing protocols				
19	**CO3**	1	The students will be able to gain the • KnowledgeOfMathematics • KnowledgeOfScience, • KnowledgeIn Specific Engg. Problem & To Find Solution	3
20		2	The students will be able to • Identify • Formulate • AnalyseComplexEngineeringProblems	3
21		3	The students will be able to gain • **Design**solutions for public health & safety • **Design**solutions for environmental considerations	3
22		4	The students will be able to • Design of solution for complex problems • Analysis of problems • Synthesis of solution for complex problems	3
23		9	**The students will be able to work effectively in multidisciplinary as** • Individual In a Team	3
24		10	**The students will able to Communicate effectively by** • **Write Effective Reports** **Effective Presentations**	2
25		11	**The students will be able to gain the knowledge and understand** • Engineering principles	2

			Management of projects in a team	
26		12	**The students will be able to engage in knowledge upgradation through** • Independent learning Lifelong learning	2
27		PSO1	The students will be able to gain the fundamentals of ECE in • Communication • Networking	3
28		PSO2	The students will be able to gain the ability to • Design a tool for societal concern	2
CO4: Analyze services of TCP and UDP and **evaluate** the performance of transport layer protocols.				
29	**CO4**	1	The students will be able to gain the • KnowledgeOfMathematics • KnowledgeOfScience, • KnowledgeIn Specific Engg. Problem & To Find Solution	3
30		2	The students will be able to • Identify • Formulate • AnalyseComplexEngineeringProblems	3
31		3	The students will be able to • **Design**solutions for public health & safety • **Design**solutions for environmental considerations	3
32		4	The students will be able to gain • Design of solution for complex problems • Analysis of problems • Synthesis of solution for complex problems	3
33		9	The students will be able to work effectively in multidisciplinary as • Individual • In a Team	3
34		10	**The students will able to Communicate effectively by** • **Write Effective Reports** **Effective Presentations**	2
35		11	The students will be able to gain knowledge and understanding • Engineering principles • Management of projects in a team	2
36		12	The students will gain the ability to engage in knowledge upgradation through • Independent learning • Lifelong learning	2
37		PSO1	The students will be able to gain the knowledge in the fundamentals of ECE in • Communication • Networking	3
38		PSO2	The students will be able to gain the ability to • Design a tool for societal concern • Develop solutions for hardware/software tools	2

CO5: Analyze services of application layer and **examine** variousprotocols such as FTP, WWW, TELNET and DNS				
33.	**CO5**	1	The students will be able to gain • KnowledgeOfMathematics • KnowledgeIn Specific Engg. Problem & To Find Solution	2 Keywords Are Mapped Hence Strength Is 3
34.		2	The students will be able to • Identify • Formulate • AnalyscComplexEngineeringProblems	2
35		3	The students will be able to • DesignSolutions for Public Health & Safety • DesignSolutions for Cultural & Societal Issues. • DesignSolutions for Environmental Considerations	2
37		9	The students will be able to work effectively in multidisciplinary as • Individual • In a Team	3
38		10	**The students will able to Communicate effectively by** • **Write Effective Reports** **Effective Presentations**	2
39		11	The students will be able to gain the knowledge and understanding in • Engineering principles • Management of projects in a team	2
40		12	The students will have the ability to engage in knowledge upgradation through • Independent learning • Lifelong learning	2
41		PSO1	The students will be able to gain the knowledge in the fundamentals of ECE in • Communication • Networking	3
42		PSO2	The students will be able to gain the ability to • Design a tool for societal concern • Develop solutions for hardware/software tools	2

Signature of Course In charge **Signature of Module Coordinator** **Signature of HOD ECE**

K S INSTITUTE OF TECHNOLOGY BANGALORE-560109

DEPARTMENT OF ELECRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Dr.Dinesh Kumar D S
SUBJECT CODE/NAME : 18EC71/COMPUTER NETWORKS
SEMESTER/YEAR/SEC : VII / B
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	Module 1					
1	Introduction: Data Communications: Components, Representations,	L+D	BB+PPT	1	1	20/09/22
2	Data Flow, Networks Physical Structures,	L+D	BB+PPT	1	2	21/09/22
3	Network Types: LAN, WAN,	L+ D	BB+PPT	1	3	22/09/22
4	Switching, Internet		BB+PPT		4	23/09/22
5	Protocol Layering: Scenarios, Principles, Logical Connections	L+ D	BB+PPT	1	5	27/09/22
6	TCP/IP Protocol Suite: Layered Architecture, Layers in TCP/IP suite.	L+D	BB+PPT	1	6	28/09/22
7	Description of layers	L+ D	BB+PPT	1	7	29/09/21
8	Encapsulation and Decapsulation, Addressing, Multiplexing and Demultiplexing,	L+AV	BB+PPT	1	8	30/09/22
9	The OSI Model: OSI Versus TCP/IP	L+D	BB+PPT	1	9	1/10/22
	Module2					
10	**Data-Link Layer:** Introduction: Nodes and Links, Services, Categories of link	L+D	BB+PPT	1	10	6/10/22
11	Sublayers, Link Layer addressing: Types of addresses	L+ D	BB+PPT	1	11	7/10/22
12	ARP	L+D	BB+PPT	1	12	11/10/22
13	**Data Link Control (DLC) services:** Framing, Flow and Error Control	L+D	BB+PPT	1	13	12/10/22
14	Data Link Layer Protocols: Simple Protocol	L+D	BB+PPT	1	14	13/10/22
15	Stop and Wait protocol, Piggybacking	L+D	BB+PPT	1	15	14/10/22
16	Media Access Control: Random Access: Pure ALOHA ,slotted ALOHA	L+ D	BB+PPT	1	16	15/10/22
17	CSMA, CSMA/CD, CSMA/CA	L+ D	BB+PPT	1	17	20/10/22
18	**Wired and Wireless LANs:** Ethernet Protocol,	L+D	BB+PPT	1	18	21/10/22

19	Standard Ethernet	L+D	BB+PPT	1	19	25/10/22
20	Introduction to wireless LAN: Architectural Comparison, Characteristics, Access Control	L+D	BB+PPT	1	20	27/10/22
	Module 3					
21	**Network Layer:** Introduction, Network Layer services: Packetizing.	L+D	BB+PPT	1	21	28/10/22
22	Routing and Forwarding, Other services	L+D	BB+PPT	1	22	31/10/22
23	Packet Switching: Datagram Approach, Virtual Circuit Approach	L+D	BB+PPT	1	23	3/11/22
24	IPV4 Addresses: Address Space, Classful Addressing	L+D	BB+PPT	1	24	4/11/22
25	Classless Addressing	L+D	BB+PPT	1	25	7/11/22
26	DHCP, Network Address Resolution		BB+PPT		26	8/11/22
27	Forwarding of IP Packets: Based on destination Address, Based and Label	L+D	BB+PPT	1	27	10/11/22
28	Network Layer Protocols: Internet Protocol (IP): Datagram Format	L+D	BB+PPT	1	28	12/11/22
29	Options, Security of IPv4 Datagrams	L+D	BB+PPT	1	29	14/11/22
30	Unicast Routing: Introduction Routing Algorithms: Distance Vector Routing	L+D	BB+PPT	1	30	15/11/22
31	Link State Routing, Path vector routing	L+D	BB+PPT	1	31	17/11/22
	Module 4					
32	**Transport Layer:** Introduction: Transport Layer Services,Connectionless and Connection oriented Protocols	L+D	BB+PPT	1	32	18/11/22
33	Transport Layer Protocols: Simple protocol	L+D	BB+PPT	1	33	24/11/22
34	Stop and wait protocol,Go-Back-N Protocol	L+D	BB+PPT	1	34	25/11/22
35	,Selective repeat protocol	L+D	BB+PPT	1	35	28/11/22
36	User Datagram Protocol: User DatagramUDP Services	L+D	BB+PPT	1	36	29/11/22
37	Transmission Control Protocol: TCP Services, Features	L+D	BB+PPT	1	37	1/12/22
38	Segments, TCP connection	L+D	BB+PPT	1	38	2/12/22
39	State Transition diagram, Windows in TCP	L+D	BB+PPT	1	39	5/12/22
40	Flow control, Error control, TCP congestion control	L+D	BB+PPT	1	40	6/12/22
	Module 5					
41	Application Layer: Introduction: providing services	L+D	BB+PPT	1	41	8/12/22
42	Application- layer paradigms,	L+D	BB+PPT	1	42	9/12/22
43	Standard Client -Server Protocols: WWW, Hyper Text Transfer Protocol,	L+D	BB+PPT	1	43	10/12/22
44	FTP: Two connections, Control Connection, Data Connection	L+D	BB+PPT	1	44	12/12/22
45	Electronic Mail: Architecture	L+D	BB+PPT	1	45	13/12/22
46	Wed Based Mail	L+D	BB+PPT	1	46	15/12/22

47	Telnet: Local versus remote logging.	L+D	BB+PPT	1	47	14/12/22
48	Domain Name system: Name space,DNS in internet,	L+D	BB+PPT	1	48	15/12/22
49	Resolution, DNS Messages	L+D	BB+PPT	1	49	16/12/22
50	Registrars, DDNS, Security of DNS	L+D	BB+PPT	1	50	20/12/22
51	Revision	L+D	BB+PPT	1	51	21/12/22
52	Revision	L+D	BB+PPT	1	52	27/12/22

TEXTBOOK:

T1: Data Communications and Networking, Forouzan, 5th Edition, McGraw Hill, 2016 ISBN: 1-25-906475-3.

REFERENCES:

R1: Computer Networks, James J Kurose, Keith W Ross, Pearson Education, 2013, ISBN: 0-273-76896.

R2: Introduction to Data Communication and Networking, WayarlesTomasi, Pearson Education, 2007, ISBN: 0130138282.

WEB MATERIALS:

W1: https://nptel.ac.in/courses/106/105/106105183/

W2: https://nptel.ac.in/courses/106/105/106105081/

W3: https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-829-computer-networks-fall-2002/lecture-notes/

Course Incharge **Module Coordinator** **HOD ECE** **Principal**

K S Institute of Technology, Bangalore-560109

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

ASSIGNMENT QUESTIONS

Academic Year	2021-22 (ODD)		
Batch	2019-2023		
Year/Semester/section	IV/VII/A & B		
Course Code-Title	18EC71-Computer Networks		
Name of the Instructor	Dr.Dinesh Kumar D S	Dept	ECE

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Assignment No: 1 **Total marks:10**
Date of Issue:12-10-2022 **Date of Submission: 19/10/2022**

Sl. No.	Assignment Questions	K Level	CO	Marks
1.	a. **Analyze** different network topologies with advantages and disadvantages. b. Explain various scenarios used in protocol layering.	K4	CO1	1
2.	a. **Make use of** a neat diagram and explain different layers of TCP/IP protocol suite b. **Differentiate** OSI and TCP/IP models.	K3	CO1	1
3.	a.Explain the concept of Encapsulation & Decapsulation and Mutliplexing & Demultiplexing used in internet. b.**Discuss** different adressing used in data communication	K2	CO1	1
4.	**a.Illustrate** the architecture of internet with suitable diagram b.**Illustrate** the following swictching systems with relevant digrams i.circuit switching ii.packet switching	K2	CO1	1
5.	**Build** the following wirh nctworks rclevant diagrams i.LAN ii. WAN	K3	CO1	1
6.	a.**Explain** different forms of data representation with examples b.**Explain** the components of data communication with neat diagram	K2	CO1	1

COMPUTER NETWORKS

18EC71 – Assignment-1

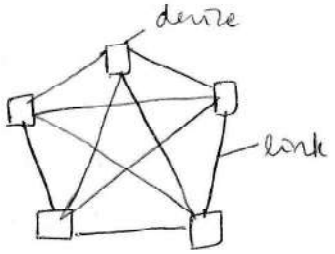
① (a) Analyse different network topologies with advantages & disadvantages.

→ * Mesh topology.

- Every device has a dedicated point to point link to every other device
- The link carries traffic only between the two devices it connects.
- For n nodes, we need (n-1) physical links & $n\left(\frac{n-1}{2}\right)$ duplex links.

Advantages: • Use of dedicated links guaranteed that each connection can carry its own data.

- It dominates traffic problems between links.
- Privacy and security.
- Easy fault identification & fault isolation.
- It is robust.

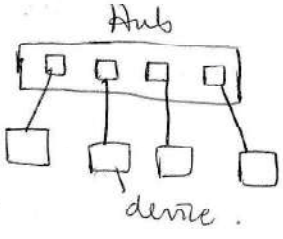


Disadvantages: • Amount of cabling and the number of I/O port required is more.

- Installation and reconnection are difficult
- Sheer bulk of the wiring is more.

* Star topology

- Each device has a dedicated point to point link only to a central controller, usually called a hub.
- They do not allow direct traffic between devices
- The controller acts as an exchange.



Advantages: • less expensive.

- Each device is connected only to one link and one I/O port
- Easy reinstall & reconfigure.
- It is robust.

Disadvantage: - dependency of the whole topology on one hub. If the hub goes down, the whole system is dead.

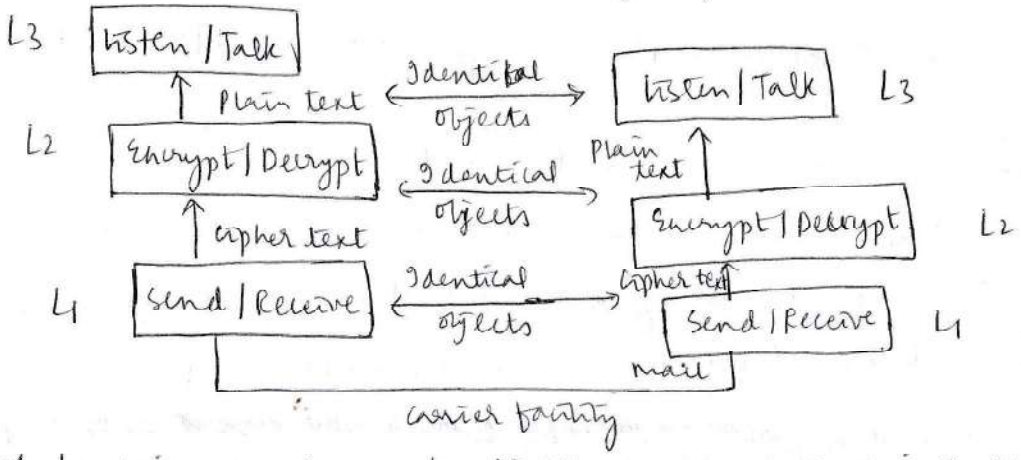
* Bus topology

- It is a multipoint connection.
- One long cable acts as a backbone to a link all device.
- Nodes are connected to the bus cable by droplines & taps.

- First, they should greet each other.
- Second, confine their vocabulary to the level of their friendship
- Third, should refrain from speaking when the other party is speaking.
- Fourth, both should have the opportunity to talk about the issue.
- Fifth, should exchange some nice words when they leave.

Second Scenario

- We Assume that Ann is offered a higher-level position in her company, but needs to move to another branch in another city far from Maria.
- They decide to continue conversation using regular mail through posters.



- Protocol layering enables us to divide a complex task into several smaller and simpler tasks
- Modularity in this case means independent layers
- One advantage is allows us to separate the services from the implementation
- Communication does not always use only 2 end systems, there are intermediate systems.

(2) (a) Make use of a neat diagram and explain different layer of TCP/IP protocol suite.

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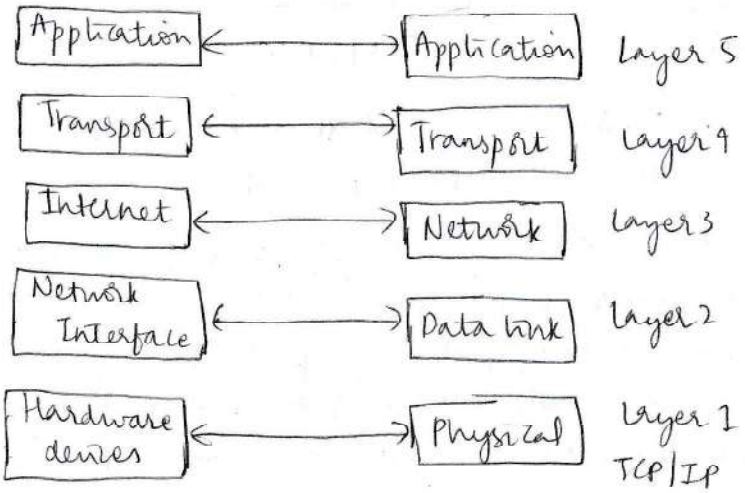


- TCP/IP - Transmission control protocol / Internet Protocol, is a protocol suite used in the internet today.
- It is a hierarchical protocol made up of interactive modules each of which provides a specific functionality.
- Today TCP/IP is thought of as a five layer model.

Physical Layer:- They are responsible for carrying individual bits in a frame.

Datalink layer: It is responsible for choosing the datagram and moving it across the link

It takes a datagram and encapsulates it in a packet called a frame.

Network layer: Responsible for creating connection bktween the source computer and destination.

The communication is between host to host.

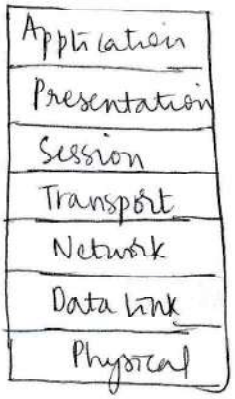
Transport layer: It is called end to end connection.

It is responsible for giving services to the application Layer.

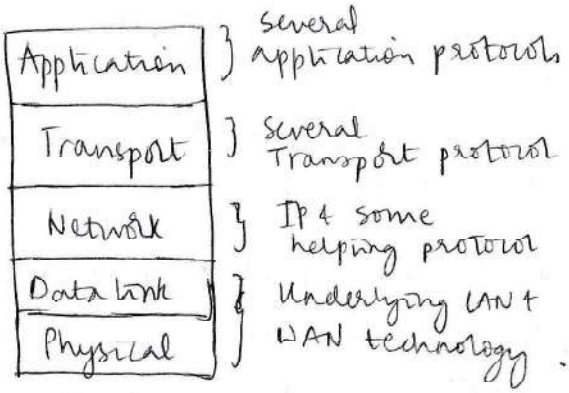
Application layer: Communication happens between two process. It includes predefined protocols, but a user can also create a pair of processes to be run at the 2 hosts.

② ⑥ Differentiate OSI and TCP/IP Models.

⟶



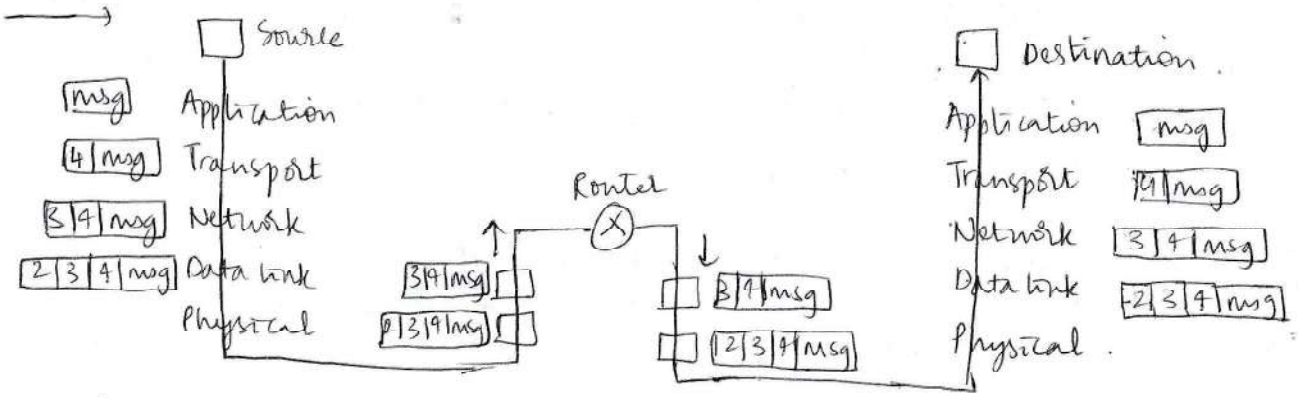
OSI Model.



TCP/IP.

- When we compare the 2 models, we find that two layers session and presentation are missing from the TCP/IP protocol.
- The application layer in the suite is usually considered to be the combination of three layers in the OSI model.
- TCP/IP has more than one transport layer protocol
- Some session layers are available in some of the transport layer protocols
- The application layers is not only one piece of software.

(5) (a) Explain the concept of encapsulation & Decapsulation and multiplexing & demultiplexing used in Internet.



Encapsulation at source:

- At the encapsulation application layer, the data to be exchanged is referred to as a message
- The transport layer takes the message as a payload, the load that the transport layer should take care of.
- The result packet is segment in (TCP) and user datagram (UPP)
- Network layer takes the transport-layer packet as data & adds own header to payload.
- The result is the network layer packet called a datagram.
- The data link layer takes the info from network layer, adds own header. The result is called frame.

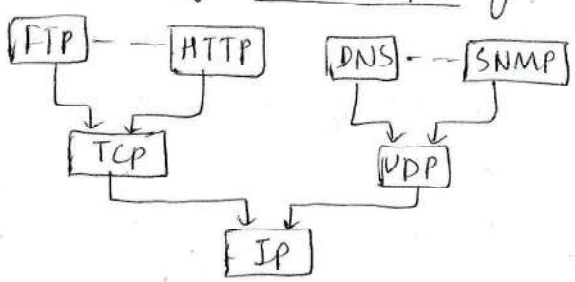
Decapsulation and Encapsulation at Router.

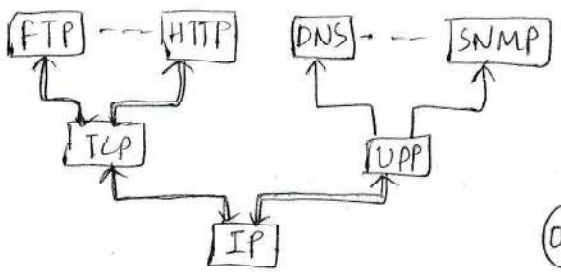
- After set of bits are delivered to data link, this layer decapsulates the datagram from frame & passes network layer.
- The datagram is then passed to the datalink layer of next link.
- The data link layer of the next link encapsulates the datagram in the frame & passes to physical layer.

Decapsulation at Destination Host

- Each layer decapsulates the received packets, removes payload & delivers to next higher layer until message reaches application checking.

Multiplexing & Demultiplexing:





- Multiplexing means that a protocol at a layer can encapsulate a packet from several next higher layer protocols (one at a time)
- Demultiplexing means that a protocol (one at a time) deliver a packet to several next higher protocols (one at a time)
- A protocol needs to have a field in its header to identify to which protocol the encapsulated packets belong.

③ ⑥ Discuss different addressing used in data communication:

⟶ Any communication that involves 2 parties needs 2 address. source address and destination address.

- We normally have only four because the physical layer does not need addresses.
- The unit of data exchange at the physical layer is a bit, which definitely cannot have address.

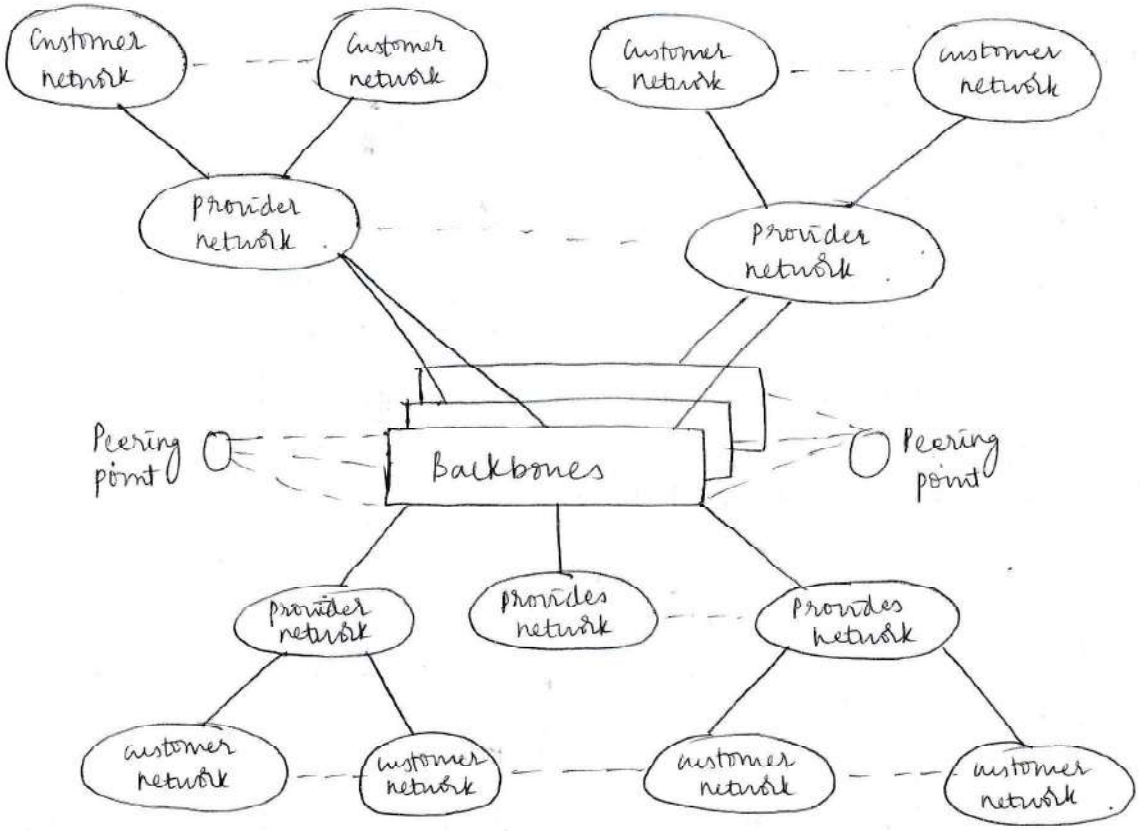
Packet Names	Layers	Addresses
message	Application layer	Names
Segmentation / user datagram	Transport Layer	Port numbers
Datagram	Network layer	logical addresses
frame	Data link layer	link-layer addresses
Bits	Physical Layer	

- At application layer, we normally use names to define the site that provides services
- At transport layer, addresses are called port numbers and these define the application-layer programs at the source and destination.
- At network layers, addresses are global
- The link layer addresses, sometimes called MAC addresses are locally defined addresses.

④ ⓐ Illustrate the architecture of Internet with suitable diagram.

⟶ • An internet is 2 & more networks that can communicate with each other

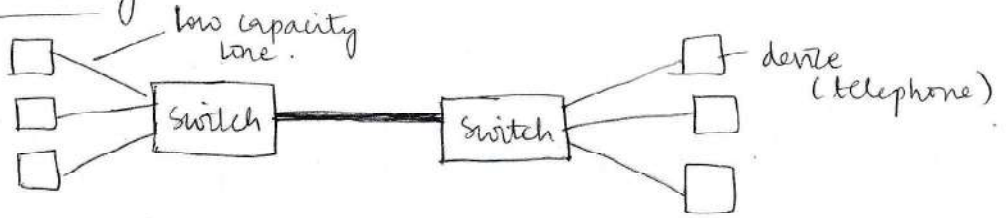
- Internet has several backbones, provides networks, customer network. At the top level, backbones are large networks owned by some communication companies.
- They are connected through some complex switching systems called peering points.
- At level 2, provides networks, that use the services of the backbones for a fee.



- Customer networks at the edge of the internet that actually use the services provided by the Internet
- Backbones & providers networks are also called Internet service protocol.

④ (b) Explain

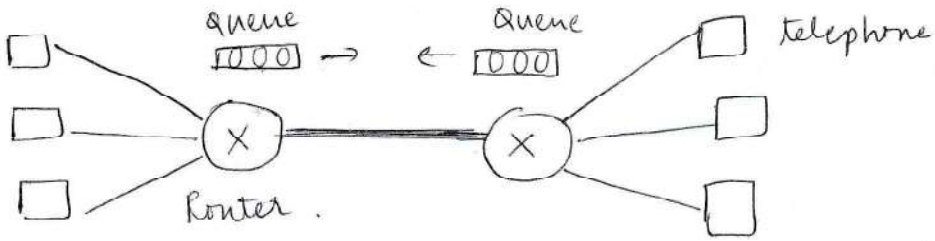
(i) Circuit Switching



- A dedicated connection called a circuit is always available between 2 end systems.
- switch can only make it active or inactive.
- The devices are connected to a switch
- The high capacity communication line can handle all devices at the same time, the capacity can be shared between all pairs of devices.
- There is not storing capability
- Circuit switched network is efficient only when it is working at its full capacity.

(ii) Packet Switched Network

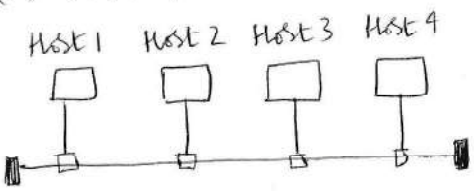
- Communication between the 2 ends is done in blocks of data called packets.

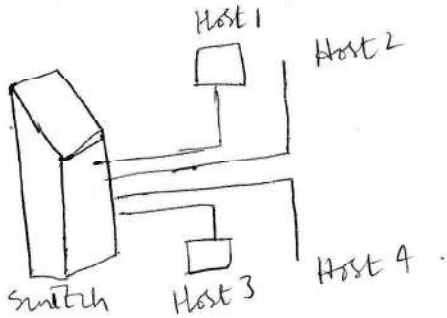


- It allows us to make the switches function for both storing & forwarding because a packet is independent entity that can be stored & sent later.
- A router in a packet switched network has a queue that can store and forward the packet.
- This eliminates waiting for packets.

(5) (a) Build the following with networks relevant diagrams.

(i) LAN.





- Local Area Network (LAN) is usually privately owned and connects some hosts in a single office building.
- Each host in a LAN has an identifier an address, that uniquely defines the host in LAN.
- In past all host in a network were connected through a common cable, which meant that a packet sent was received by all hosts.
- Today, they use switch which is able to recognize the destination address of the packet and guide the packet to its destination.
- It allows more than one pair to communicate.

(ii) WAN.

- Wide Area Network (WAN) is also an interconnection of the devices capable of communication.
- WAN has a wider geographical span.
- WAN is normally created and run by companies and leased by an organisation that uses it

point to point WAN

Connects 2 communicating devices through a transmission media.

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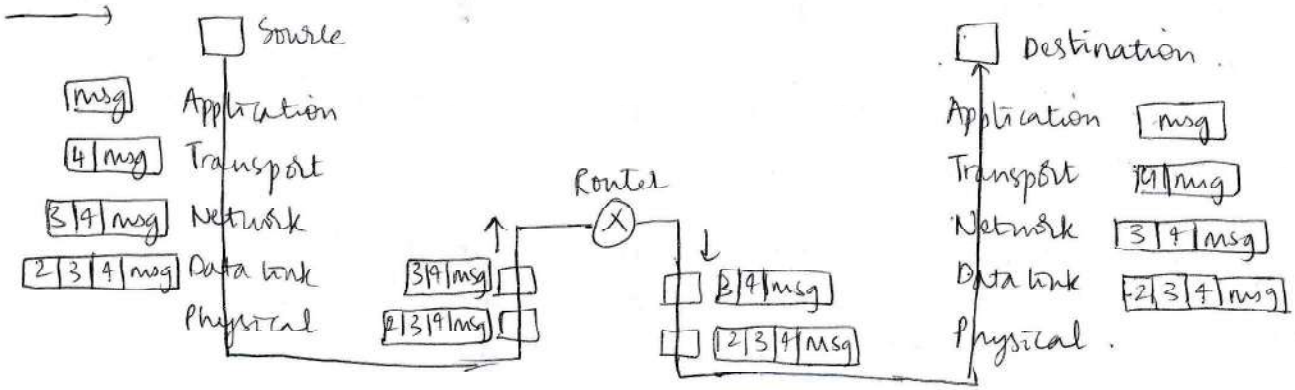

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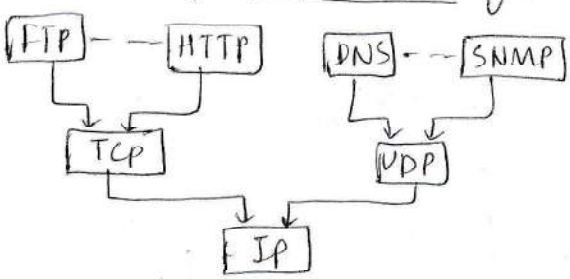

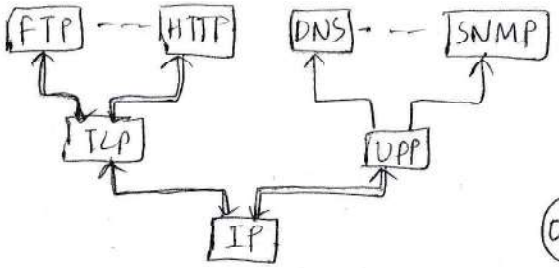

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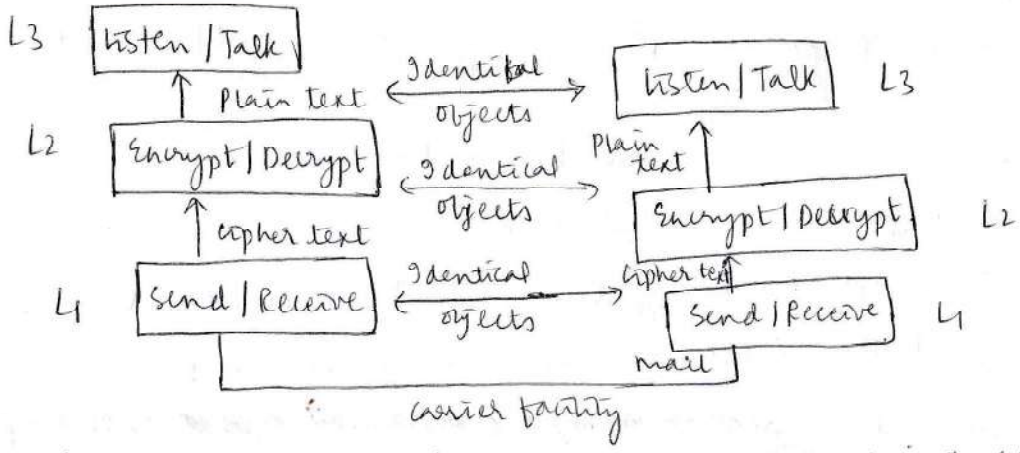

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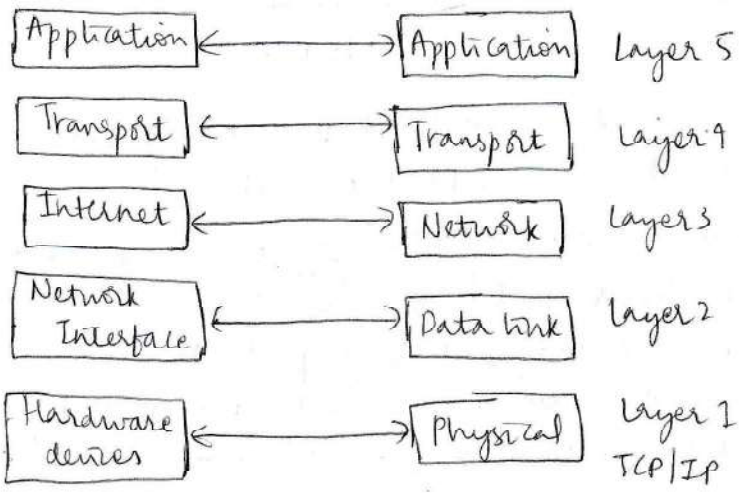

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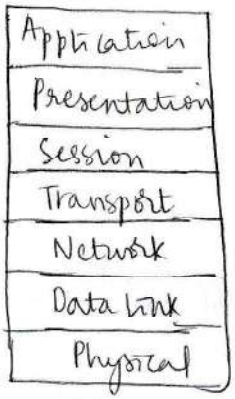
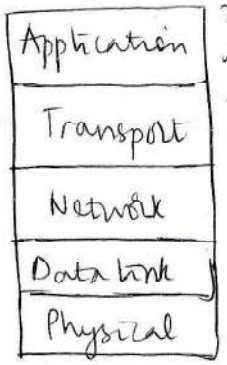


OSI Model



} several Application protocols

} several Transport protocol

} IP & some helping protocol

} Underlying LAN & WAN technology.

TCP/IP.

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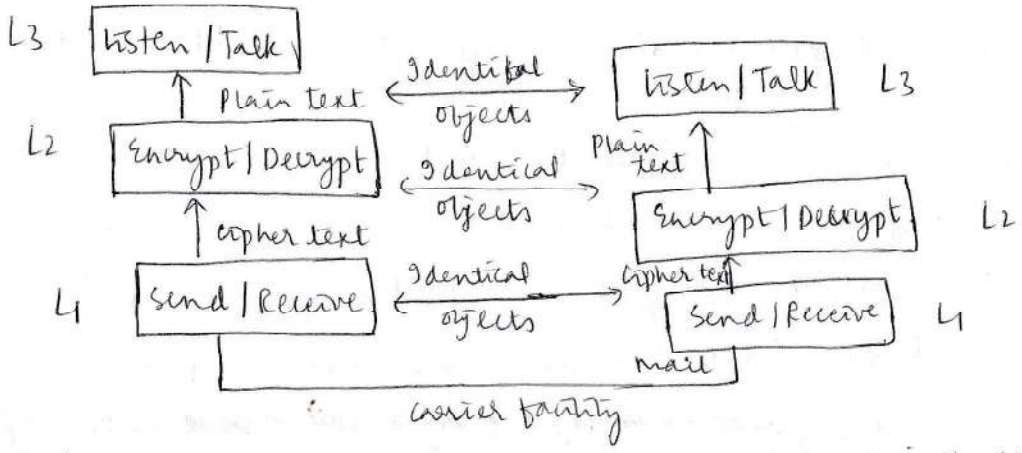

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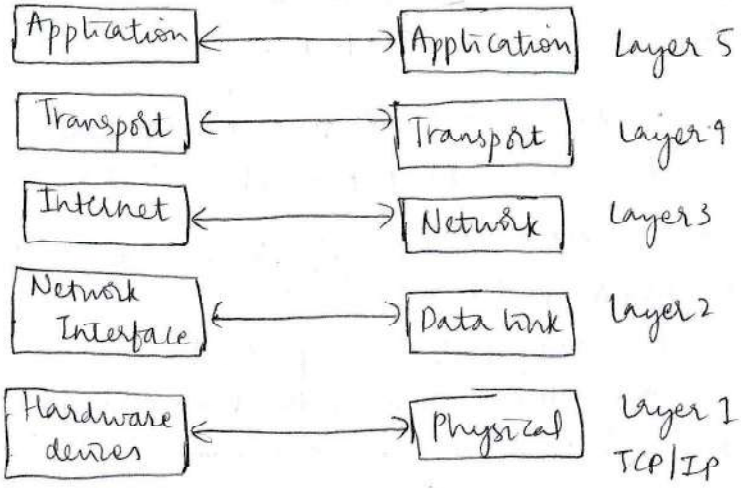
- One advantage it allows us to separate the services from the implementation
- Communication does not always use only 2 end systems, there are intermediate systems.

(2) (a) Make use of a neat diagram and explain different layer of TCP/IP protocol suite.

→



COMPUTER NETWORKS

18EC71 – Assignment-1

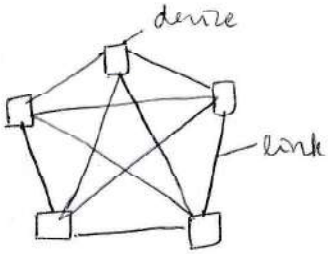
① (a) Analyse different network topologies with advantages & disadvantages.

→ * Mesh topology

- Every device has a dedicated point to point link to every other device
- The link carries traffic only between the two devices it connects.
- For n nodes, we need (n-1) physical links & $n\left(\frac{n-1}{2}\right)$ duplex links.

Advantages: · Use of dedicated links guaranteed that each connection can carry its own data.

- It dominates traffic problems between links.
- Privacy and security.
- Easy fault identification & fault isolation.
- It is robust.

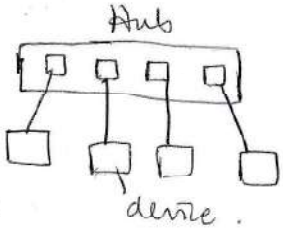


Disadvantages: · Amount of cabling and the number of I/O port required is more.

- Installation and reconnection are difficult
- Sheer bulk of the wiring is more.

* Star topology

- Each device has a dedicated point to point link only to a central controller, usually called a hub.
- They do not allow direct traffic between devices
- The controller acts as an exchange.



Advantages: · less expensive.

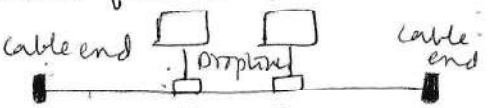
- Each device is connected only to one link and one I/O port
- Easy reinstall & reconfigure.
- It is robust.

Disadvantage: · dependency of the whole topology on one hub. If the hub goes down, the whole system is dead.

* Bus topology

- It is a multipoint connection.
- One long cable acts as a backbone to a link all device.
- Nodes are connected to the bus cable by droplines & taps.

· The signal becomes weaker & weaker as it travels further.

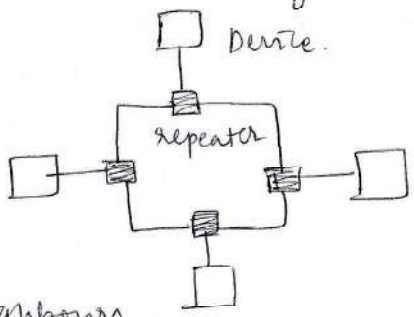


Advantage: · Easy installation
· Backbone cable can be laid along the most efficient path.
· Redundancy is eliminated.

Disadvantage: · Difficult reconnection and fault isolation
· Difficult to add new devices
· Fault or break in the bus cable stops all transmission

* Ring Topology:

· Each device has a dedicated point to point connection with only the 2 devices on either side of it
· Each device incorporates a repeater!
· When a signal is received, the repeater regenerates the bits and passes them along.



Advantages: · Easy to install and reconfigure.
· Each device is linked to only its immediate neighbours
· Fault isolation is simplified.

Disadvantage: · Unidirectional traffic.
· A break in the ring can disable the entire network.

① (b) Explain various scenarios used in protocol layering.

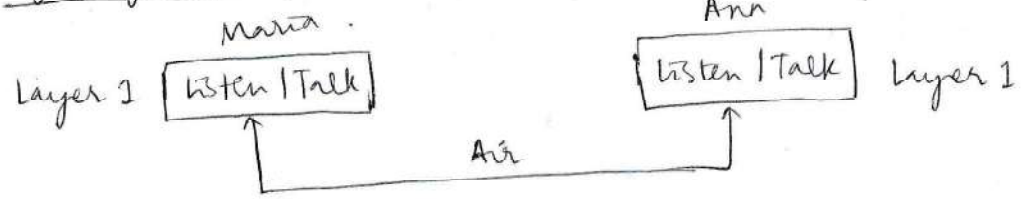
→ A protocol defines the rules that both the sender & receiver and all intermediate devices that need to follow.

When communication is complex, we may need protocol at each layering

First scenario:

Communication is so simple that it can occur in only one layer.
Assume maria and Ann are neighbours with a lot of common ideas.
Common ideas. Communication takes place in one layer.

Single layer protocol.



K S Institute of Technology, Bangalore-560109

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

ASSIGNMENT QUESTIONS

Academic Year	2022-23 (ODD)		
Batch	2019-2023		
Year/Semester/section	IV/VII/A & B		
Course Code-Title	18EC71-Computer Networks		
Name of the Instructor	Dr.Dinesh Kumar D S	Dept	ECE

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Assignment No: 2 **Total marks:10**
Date of Issue: 15/11/2022 **Date of Submission: 25/11/2022**

Sl. No.	Assignment Questions	K Level	CO	Marks
1.	Analyze different adressing mechanisms used in wireless LAN	K4	CO2	1
2.	Analyze IEEE 802.11 MAC layer format with all the fields	K4	CO2	1
3.	Discuss differenet services provided by network layer	K2	CO3	1
4.	A block of adress is granted to a small organization.one of the adress is 210.16.37.39/27. Evaluate the first adress,last adress and number of adresses.	K4	CO3	1
5.	an organization is granted a block of adress with beginning adress 20.24.74.0/24. design a sub blocks with i.10 ii.60 & iii.120 adresses	K4	CO3	1
6.	Analyze IPV4 datagram format with all the necessary fields	K4	CO3	1
7.	Make use of different classful IPV4 adressing with example	K3	CO3	1
8.	Analyze link state routing with its link state data base	K4	CO3	1
9.	Analyze Go –Back-N protocol with FSM	K3	CO4	1
10.	Analyze selective repeat protocol with FSM	K4	CO4	1

Course Incharge

HOD ECE

Computer Network

Assignment - 2

1. Analyse different addressing mechanism used in wireless LAN.

The IEEE 802.11 specifies 4 cases, defined by value of 2 flags in flag control field.

To DS	From DS	Address 1	Address 2	Address 3	Address 4
0	0	Destination	Source	BSS ID	N/A
0	1	Destination	Sending AP	Source	N/A
1	0	Receiving AP	Source	Destination	N/A
1	1	Receiving AP	sending AP	Destination	Source

Address 1 - is always address of next device that frame will visit.

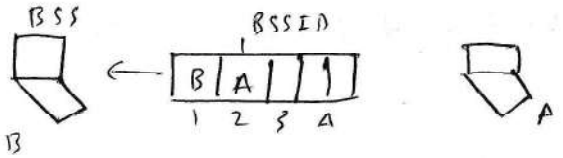
Address 2 - is address of previous device that frame has left.

Address 3 - is address of final destination if it is not defined by address 1 on the original source station if it's not defined by address 2.

Case 1 - 00, To DS = 0, From DS = 0

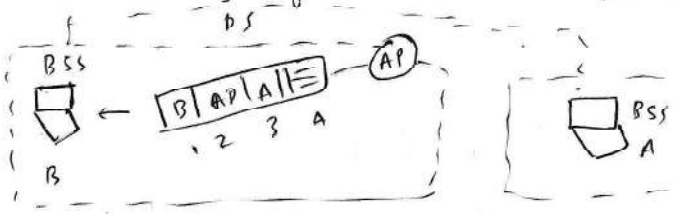
which means the frame is not going to distribution system nor coming back.

Going from one system to another without coming back.



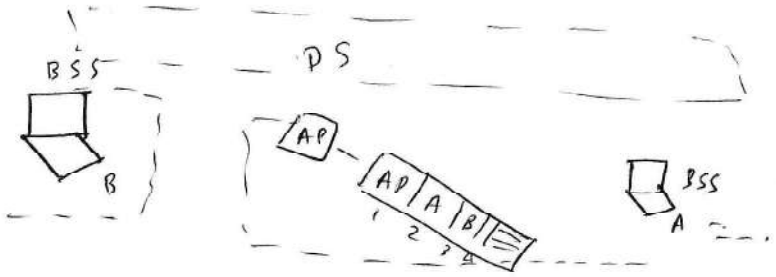
Case 2: 01 To DS = 0 | From DS = 1

Frame is coming from DS (AP) & going to a station.



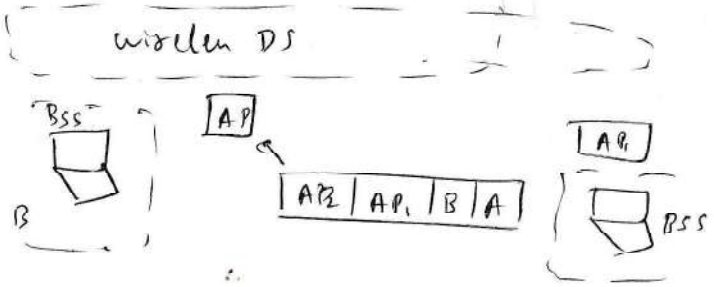
Case 3 : 10 To DS = 1 | From DS = 0

Frame is going from a station to an AP. Ack is sent to original station.

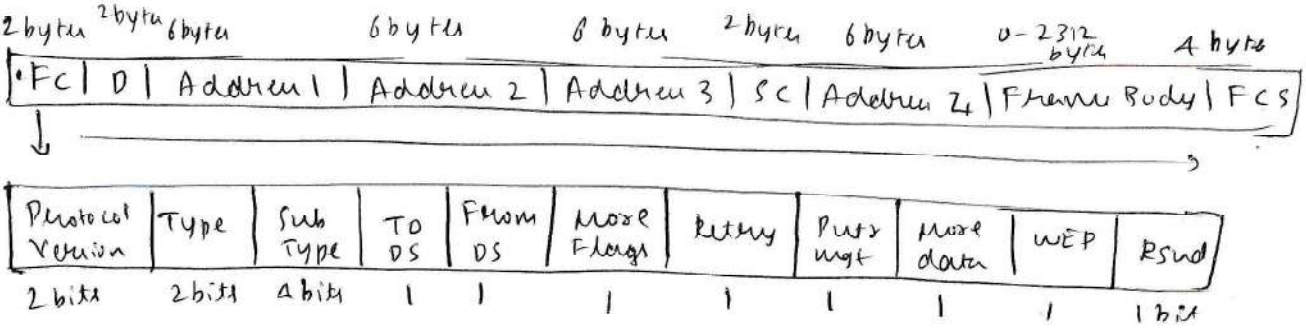


Case 4 : 11 To DS = 1 | From DS = 1

Here frame is going from AP to another in wireless DS



2) Analyse IEEE 802.11 MAC layer format with all fields.



→ Frame control (FC)

It is 2 byte long & define the type of frame & some control information.

Version	(current version is 0
Type	Mgt (00), Ctrl (01), data (10)
Subtype	1101 (Ack), 1100 (CTS), 1011 (RTS)
To DS	
From DS	
Power Mgnt	when set 1 - Retransmitted frame
Retry	when set 1 - more fragments

More data -	when set 1 - Station has more data to send
WEP	wired Equipment privacy
Rsvd	Reserved.

→ D - define the duration of Txn. One control frame it defines ID of frame.

→ Address - There are 4 fields which depends on value of DS & from DS.

→ SC - Sequence control (16 bit)

first 4 bits define the fragment number, last 12 bits define sequence number

→ Frame Body - Contains information based on type & subtype defined in FC field.

→ FCS - Frame Control Status

Contains a CRC-32 error detection sequence.

3. Different services provided in network layer.

→ Packetizing - Packet switching

There are 2 main approaches.

- Datagram (connectionless) - Use only destination address & independent of paths.
- Virtual circuit (connection oriented)

Relationship exists b/w all packets belonging to message.

→ Error control

Packet in network layer may be fragmented at each router, which makes error checking at this layer inefficient.

→ Flow control

It regulates amount of data a source can send without overwhelming at receiver.

→ Congestion Control

It is a situation in which too many datagrams are present in an area of Internet.

→ Quality of Service

Internet has improved by providing better quality of service to support these applications.

4) A block of address is granted to a small organization one of address is 210.16.37.39/27. Evaluate first, last & number of address.

→ 11010010. 00010000. 00100101. 00100111

n = 27

32 - 27 = 5

→ First address

11010010. 00010000. 00100101. 00100000

210. 16. 37. 32

→ Last Address

11010010. 00010000. 00100101. 00111111

210. 16. 37. 63

Total number of Addresses

$2^5 = 32$ address

5) An organisation is granted a block of address with beginning address 20.2A.74.0/2A.

Design subblock with 10, 60, 120 address.

→ $2^{32-24} = 256$

20.24.74.0/24 → 14.24.74.255/24.

If no of address is largest subblock which is 120 is not power of 20

$128 = 2^7$ [n1 = 7] n1 = 32 − 7 = 25

→ 20.24.74.0/25 − 14.24.74.127/25

→ $60 = 2^6$ = n2 = 6 n2 = 32 − 6 = 26

20.24.74.128/26 − 20.24.74.191/26

→ $10 = 2^4$ = n3 = 32 − 4 = 28

20.27.74.192/28 − 20.24.74.207/28

→ No of address = 128 + 64 + 16 = [208]

N = 256

20.24.74.0/24 [n = 24] 20.24.74.255/24

20.24.74.0/25 [n1 = 25] 20.24.74.127/25

20.24.74.128/26 [n2 = 26] 20.24.74.191/26

20.24.74.192/28 [n3 = 28] 20.24.74.207/28

Unused = 256 − 208 = [48]

6) Analyse IPV4 datagram formed with all necessary fields.

← 20 − 65,535 bytes →

← 20 − 60 bytes →

← | Header | Payload |

Flags | ▨ | D | M |

→ Packets used by IP are called datagram.

→ A datagram is a variable length packet consisting of 2 parts header & payload (data)

→ The header is 20 to 60 bytes in length & contains information essential for routing & delivery.

→ VER - Version Number

→ Header Lg - Defines total Lg of datagram header in 4 bytes.

→ Service type - defines how datagram should be handled.

→ Protocol - packet is called a payload

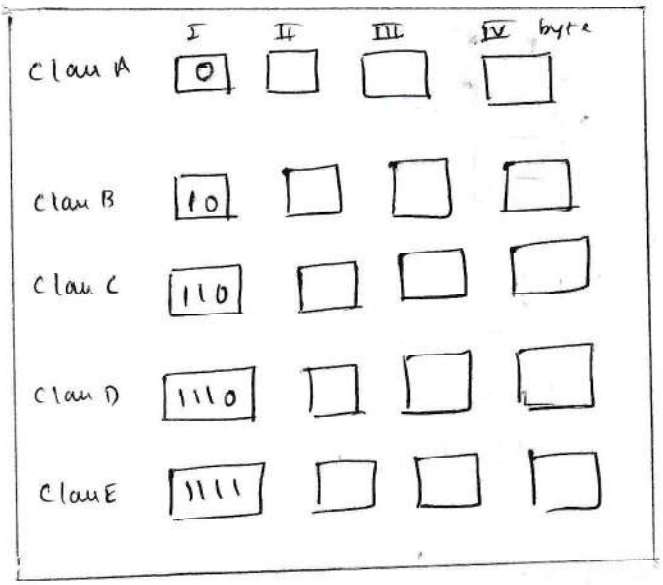
→ Options - options can be used for network testing & debugging.

→ Time to live - used to control the max no of hops taken by data.

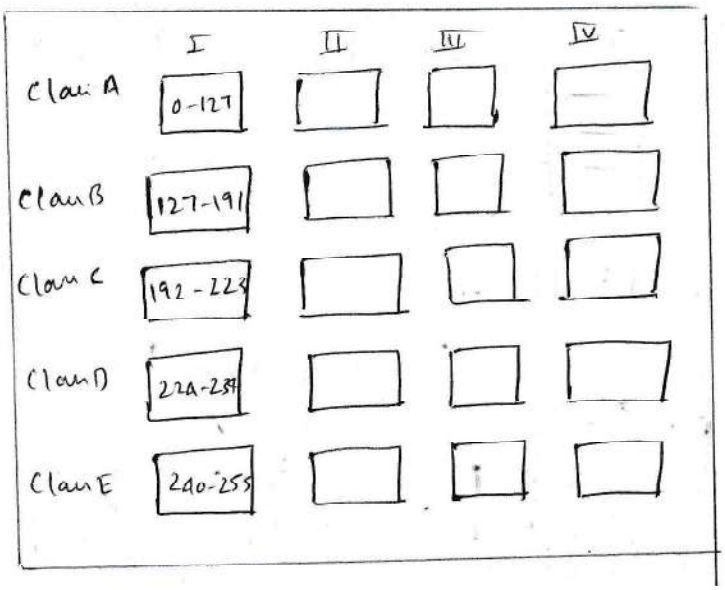
7. Make use of different classful IPV4 address with eg.

- Normally class A address were designed for large organisation with large number of attached hosts or routers.
- Class B address were designed for midsize organization with tens of thousands of attached hosts or routers.
- Class C address were designed for small organisations with a small number of attached hosts or routers
- Class D address were designed for multicasting
- Class E address were reserved for future use.

Primary Notation



Dotted Decimal Notation

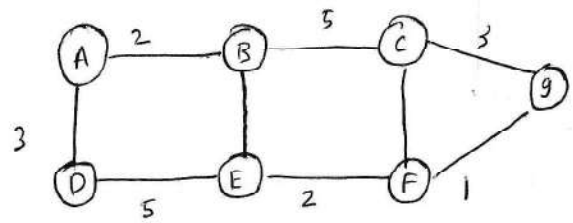


8. Analyse link state with its link state database

A routing algorithm for creating cost trees & forwarding tables is link state (LS) routing

Link state database (LSDB)

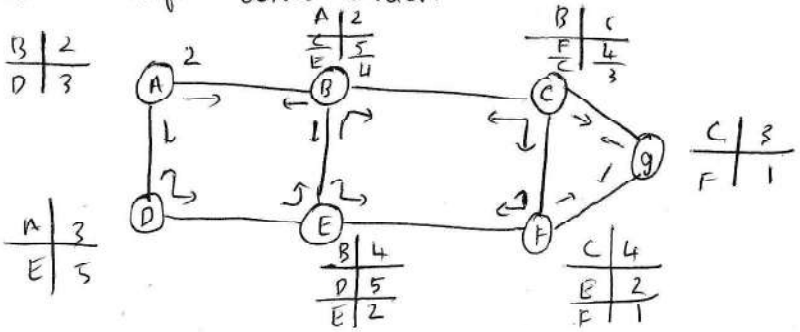
LSDB is a two dimensional array in which the value of each cell defines the cost of corresponding link.



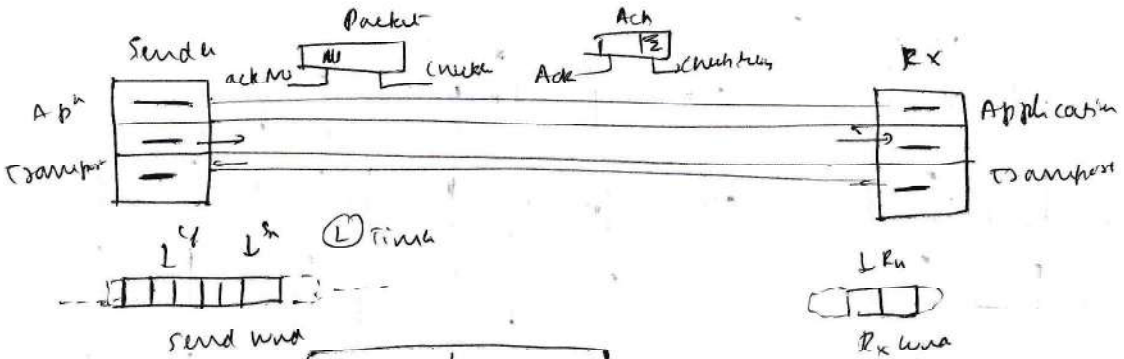
weighted graph

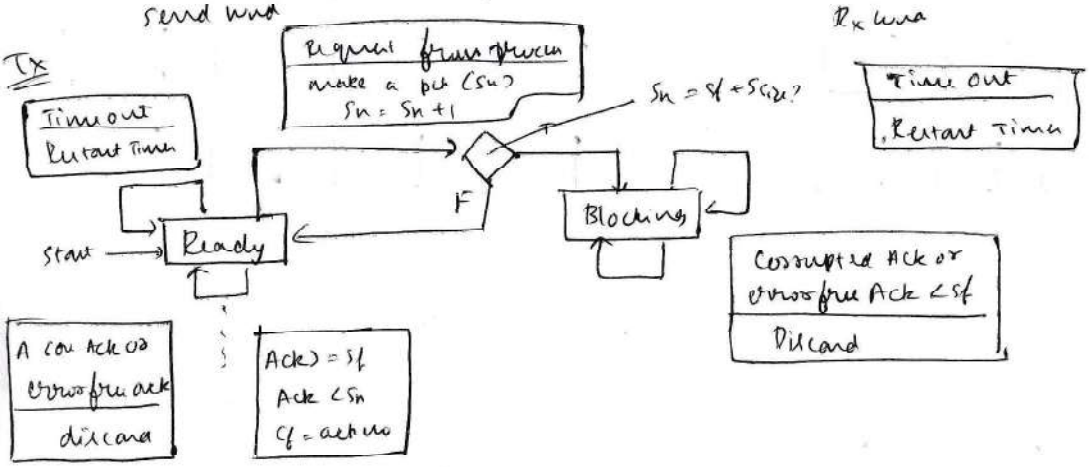
	A	B	C	D	E	F	G
A	0	2	∞	3	∞	∞	∞
B	2	0	5	∞	4	∞	∞
C	∞	5	0	∞	∞	4	3
D	3	∞	∞	0	5	∞	∞
E	∞	4	∞	5	0	2	∞
F	∞	∞	4	∞	2	0	1
G	∞	∞	3	∞	∞	1	0

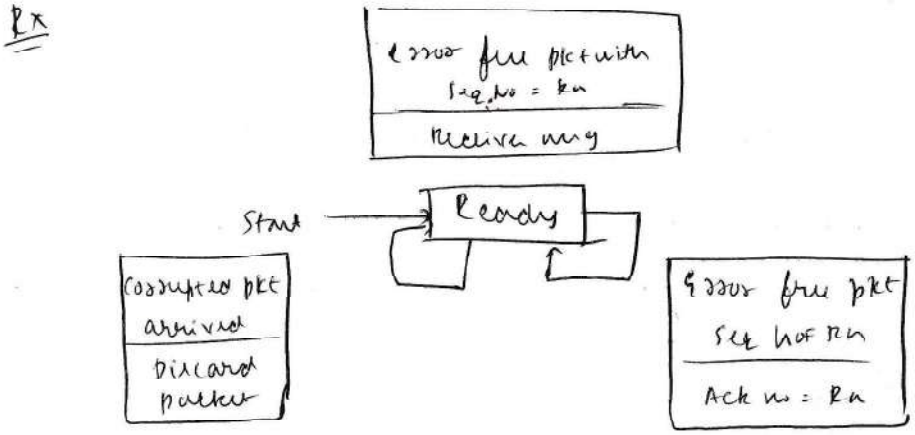
In LSR, flooding is used to create LSDB for each node that contains info about which interface each node can send & receive node



9. Analyse Go-Back protocol with FSM.





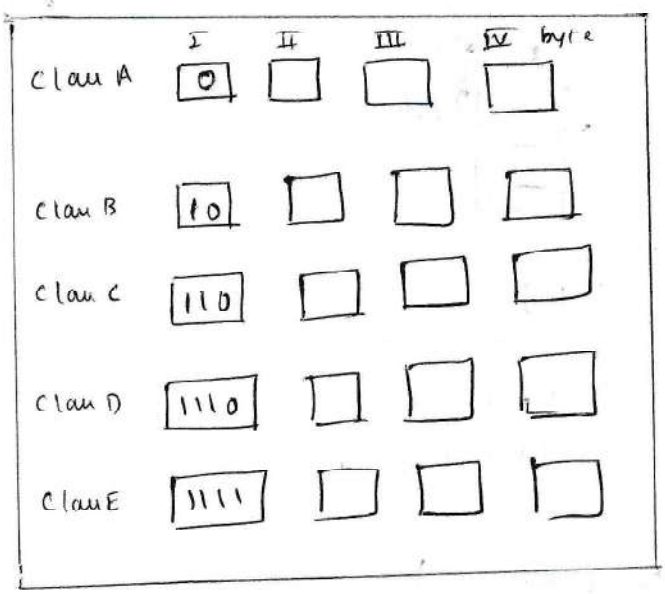


The ack no is commutative & defines the sequence number of next packet expected to arrive.

The maximum size of window is $2^m - 1$

The seq. no are mod 2^m, m = size of seq no

Primary Notation



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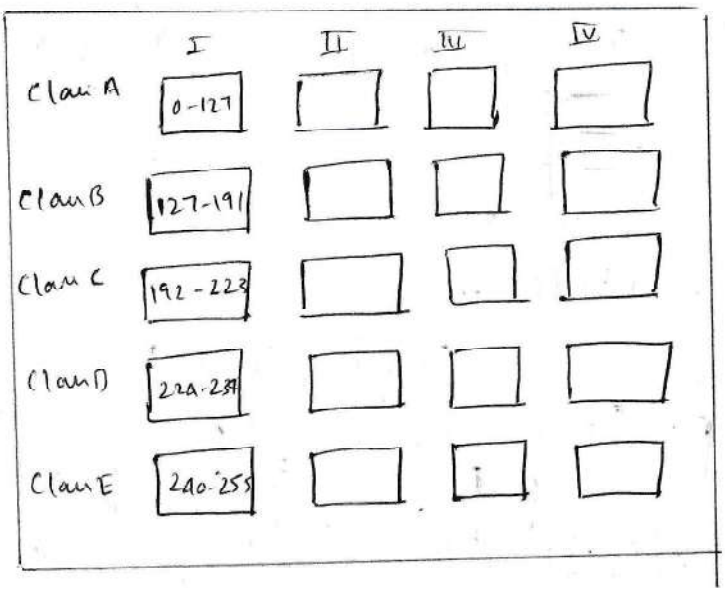

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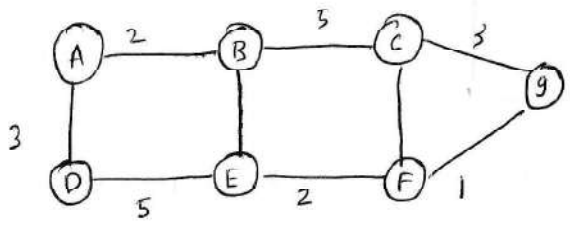
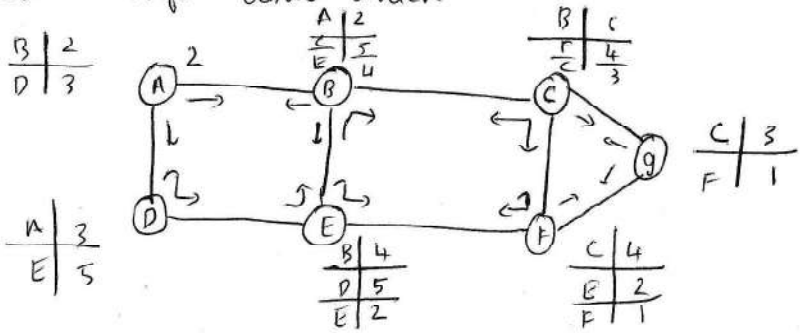


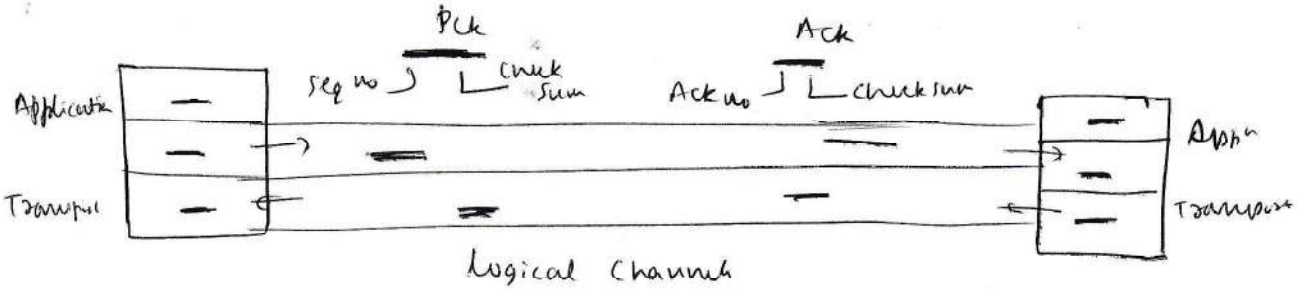
weighted graph

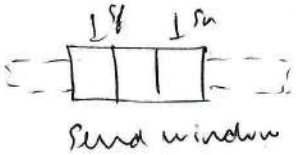
	A	B	C	D	E	F	G
A	0	2	∞	3	∞	∞	∞
B	2	0	5	∞	4	∞	∞
C	∞	5	0	∞	∞	4	3
D	3	∞	∞	0	5	∞	∞
E	∞	4	∞	5	0	2	∞
F	∞	∞	4	∞	2	0	1
G	∞	∞	3	∞	∞	1	0

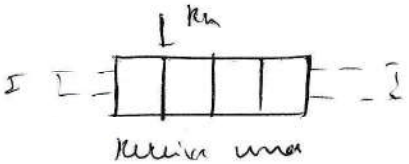
In LSR, flooding is used to create LSDB for each node that contains info about which interface each node can send & receive node



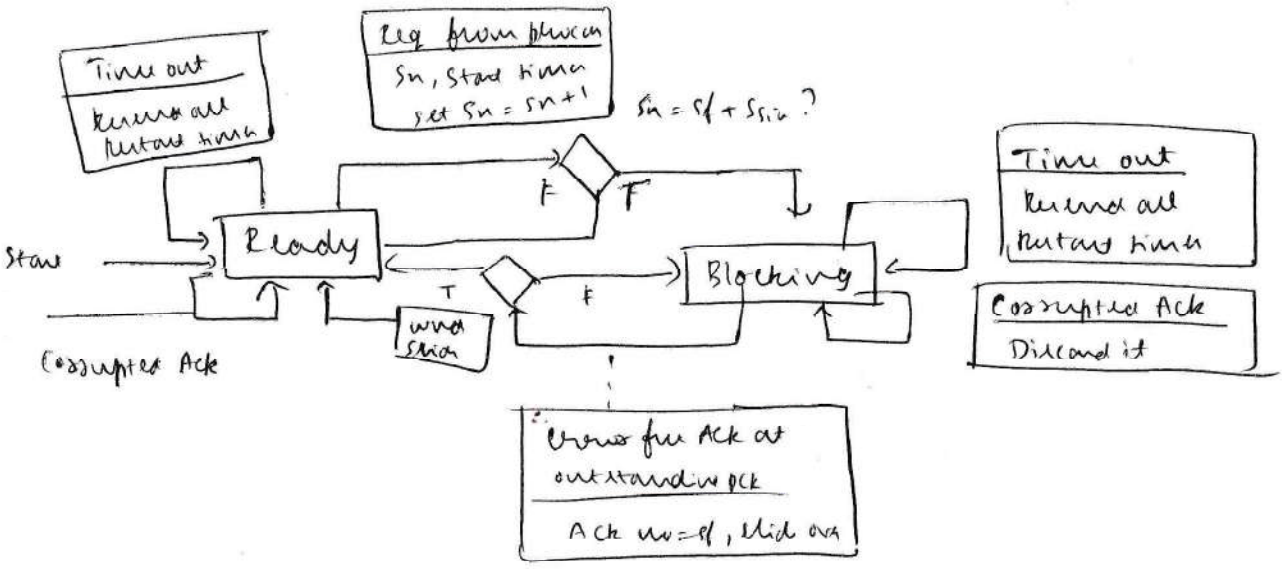
10) Analyse selective repeat protocol with FSM.



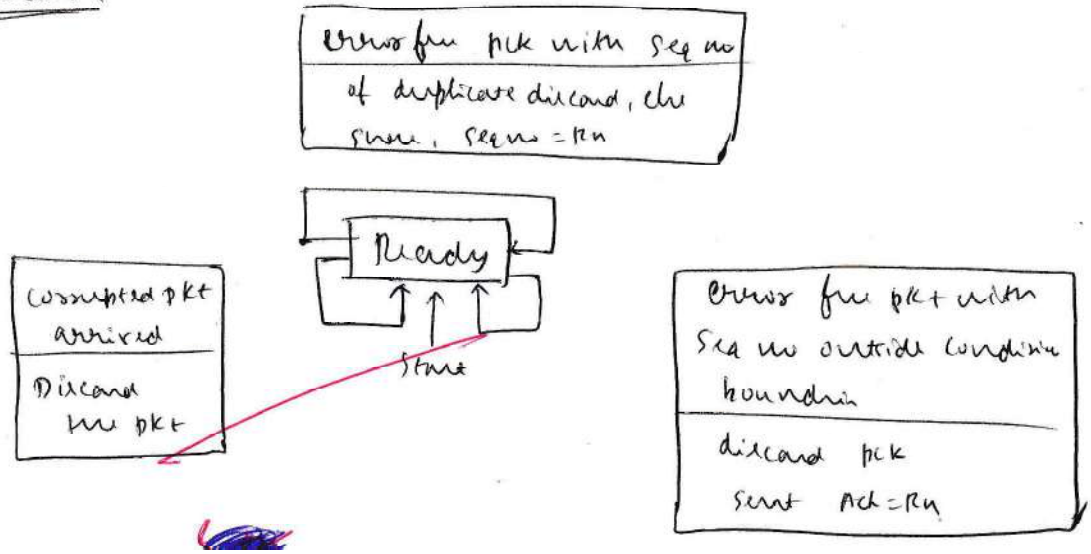




FSM



Receiver



K S Institute of Technology, Bangalore-560109

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

ASSIGNMENT QUESTIONS

Academic Year	2022-23 (ODD)		
Batch	2019-2023		
Year/Semester/section	IV/VII/A		
Course Code-Title	17EC81-Computer Networks		
Name of the Instructor	Dr.Dinesh Kumar D S	Dept	ECE

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Assignment No: 3 **Total marks:10**
Date of Issue: 12/12/2022 **Date of Submission: 19/12/2022**

Sl. No.	Assignment Questions	K Level	CO	Marks
1.	Distinguish sending and receiving buffers in TCP	K4	CO4	1
2.	Analyze the working of selective repeat protocol and discover why the size of the send and receive window inselective repeat can be at most one half of 2^m.	K4	CO4	1
3.	List the general services provided by UDP withformats	K2	CO4	1
4.	Explain TCP segment format with a neat diagram	K4	CO4	1
5.	Analyze Persistent and non-persistentconnections in HTTP.	K4	CO5	1
6.	Analyze the concept of Web based Email with respectto general Email	K4	CO5	1
7.	Analyze the architecture and format of Electronic Mail	K4	CO5	1
8.	Analyze the concept of FTP in detail.	K4	CO5	1
9.	Contrast Local and Remote Logging in TELNET	K3	CO5	1
10.	List the features of DNS Recursive and IterativeResolutions	K2	CO5	1

Course Incharge

HOD ECE

K.S. INSTITUTE OF TECHNOLOGY, BANGALORE - 560109

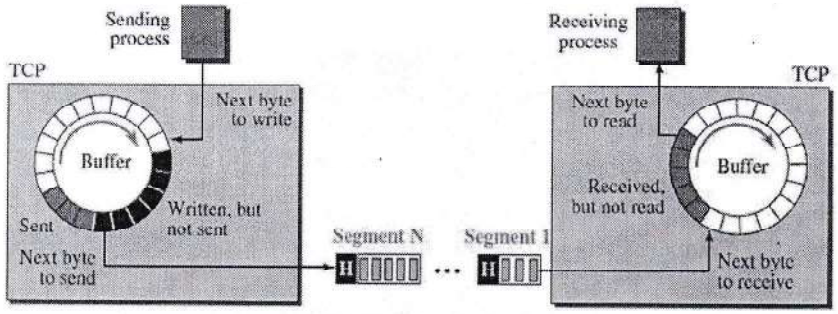
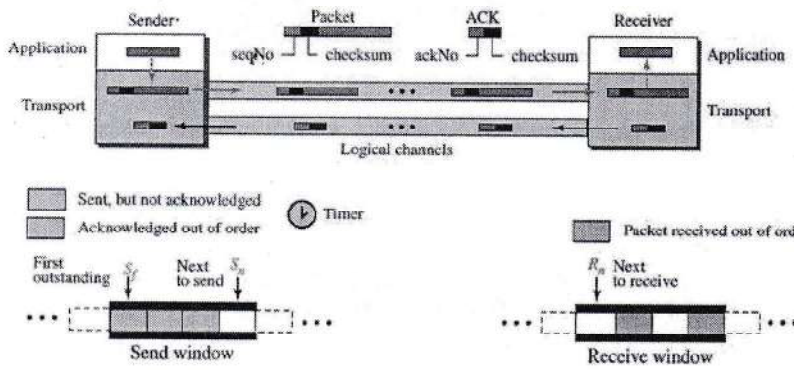
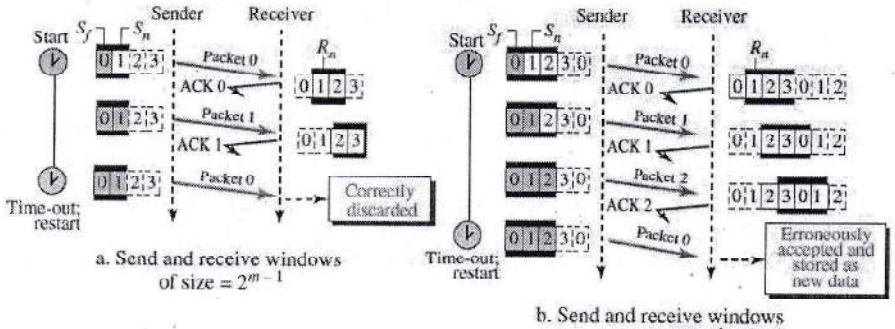
ASSIGNMENT 3 SCHEME

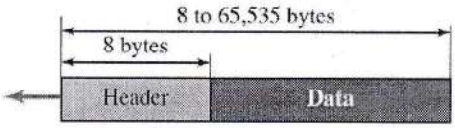
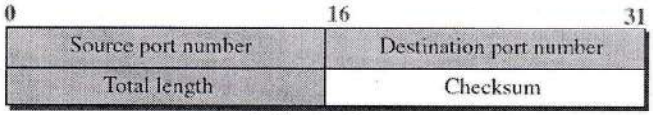
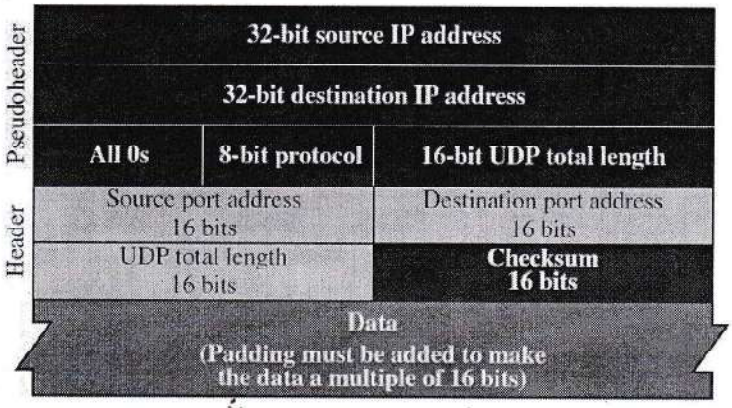
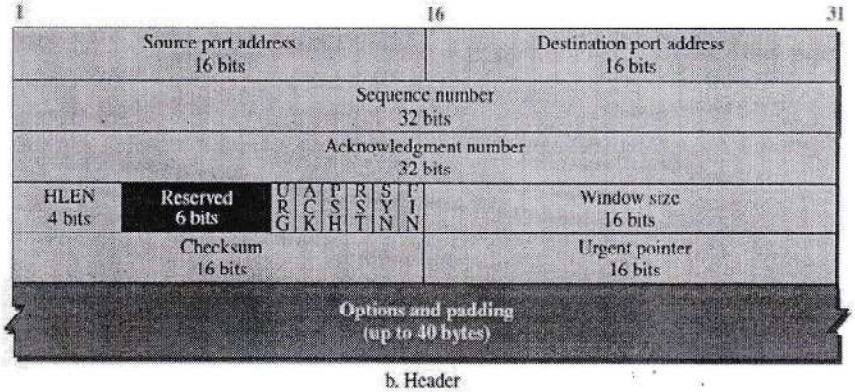
2022 – 23 ODD SEMESTER

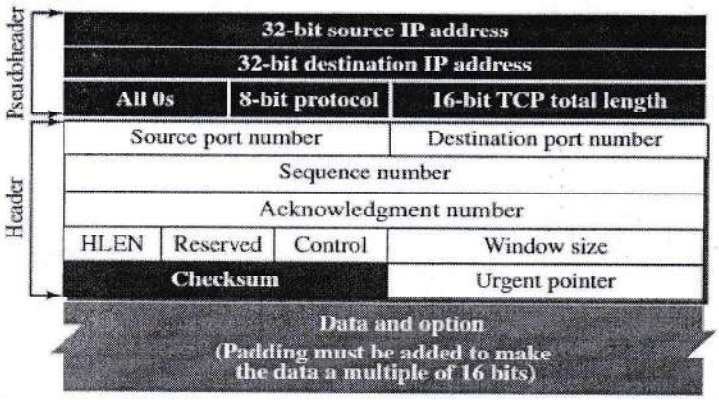
Degree : B.E **Semester : VII**

Branch : ECE **Course Code : 18EC71**

Course Title : COMPUTER NETWORKS **Max Marks : 10**

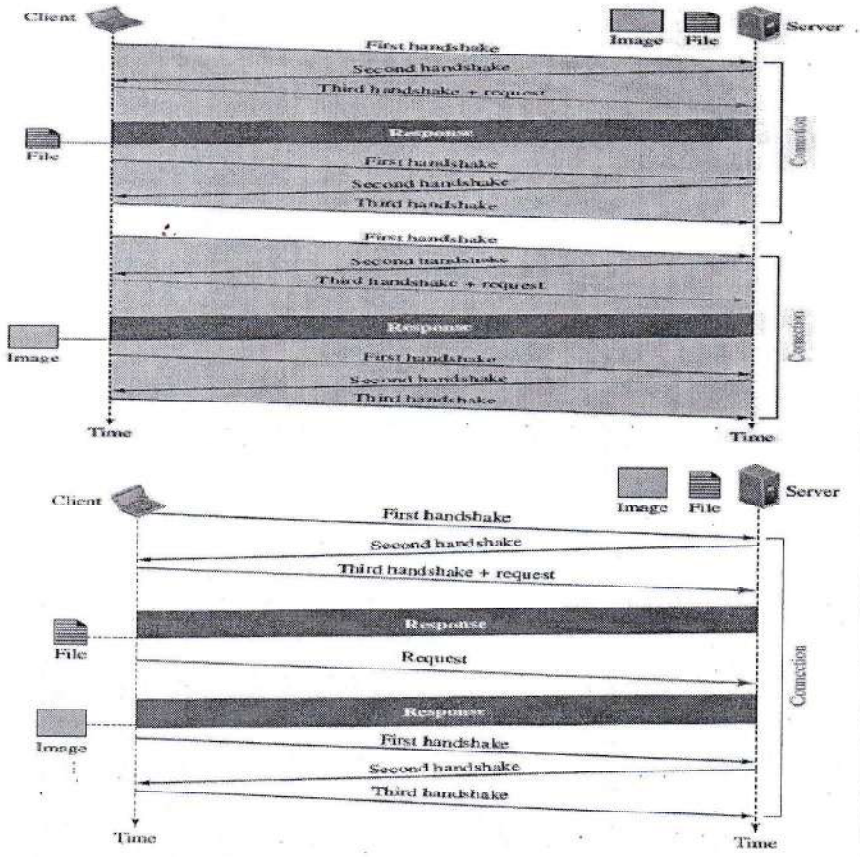
Q.NO.	POINTS	MARKS
1	 **Explanation**	6
2	 **FSM at Sender and Receiver**  a. Send and receive windows of size = $2^m - 1$ b. Send and receive windows of size > $2^m - 1$ **Explanation**	

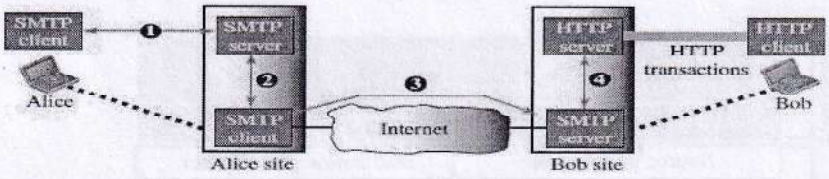
3	 a. UDP user datagram  b. Header format  **Connectionless, Unreliable: No flow control, process-to-process communication , No Error control except for optional checksum, No congestion control, Encapsulation and Decapsulation, Multiplexing and Demultiplexing, Queuing : Explanation**	6
4	 a. Segment  b. Header	6



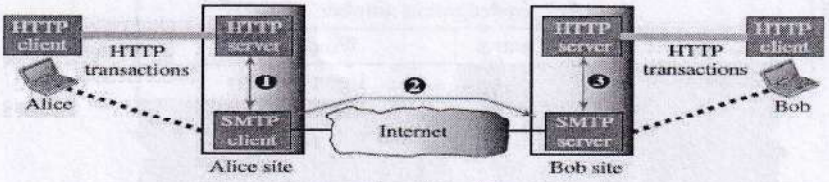
Explanation

5





Case 1: Only receiver uses HTTP

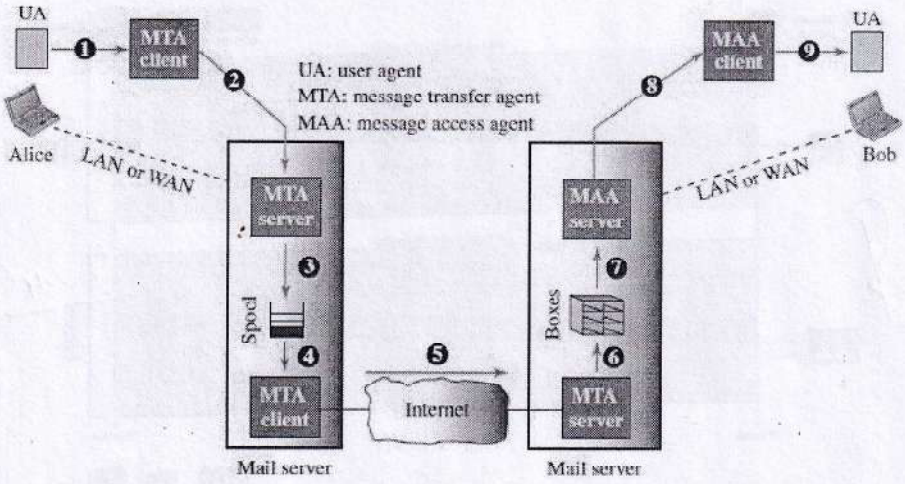


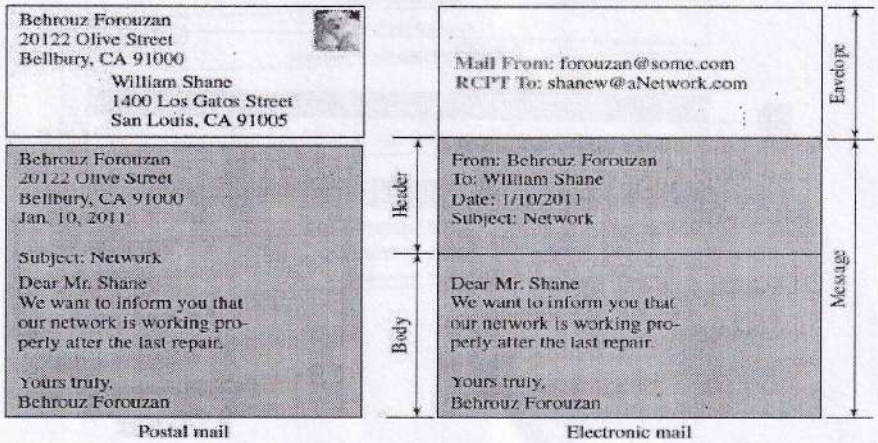
Case 2: Both sender and receiver use HTTP

Explanation

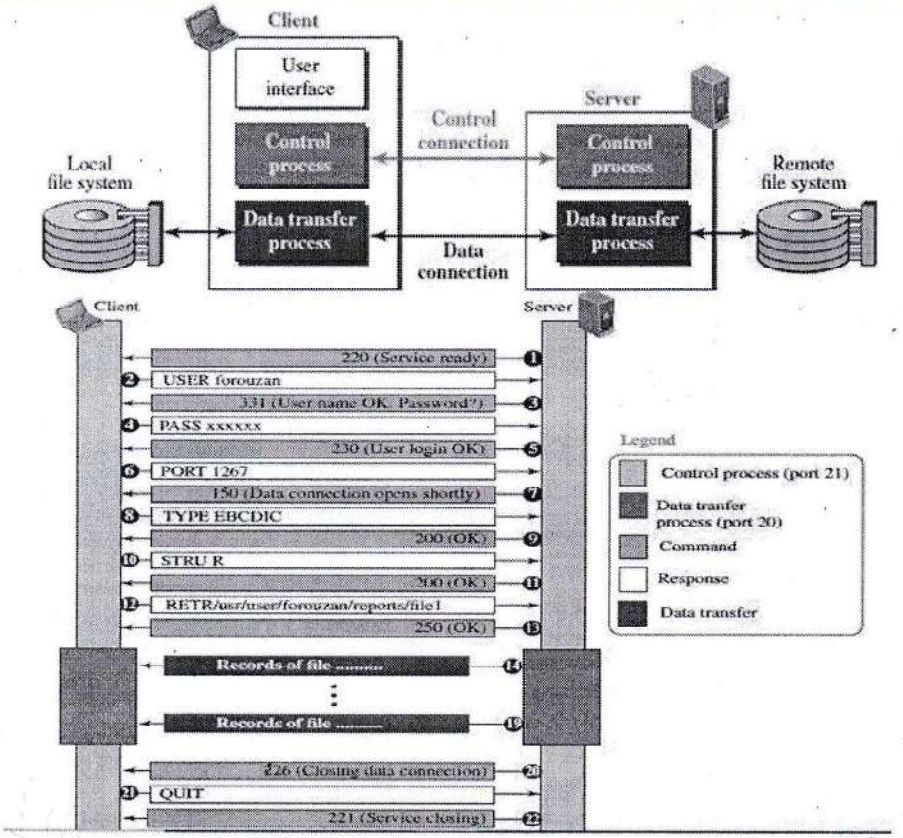
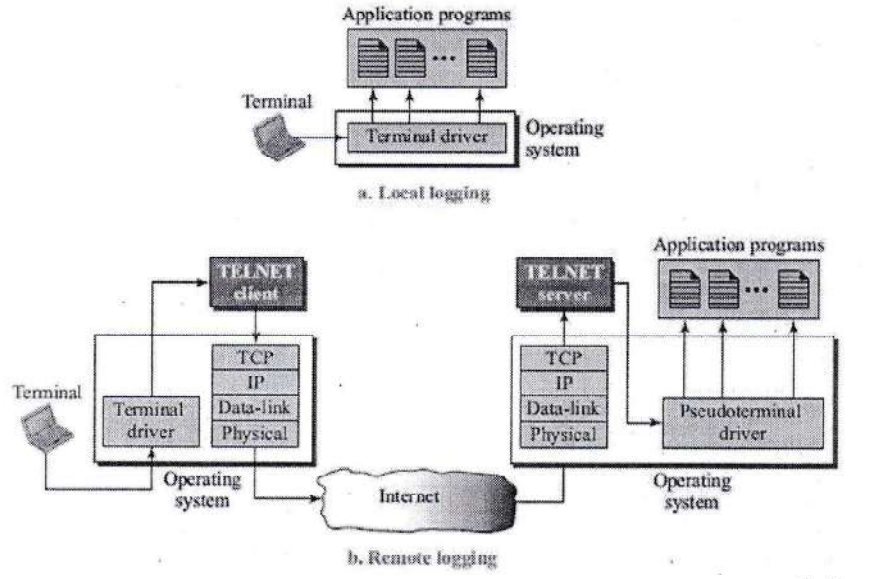
7

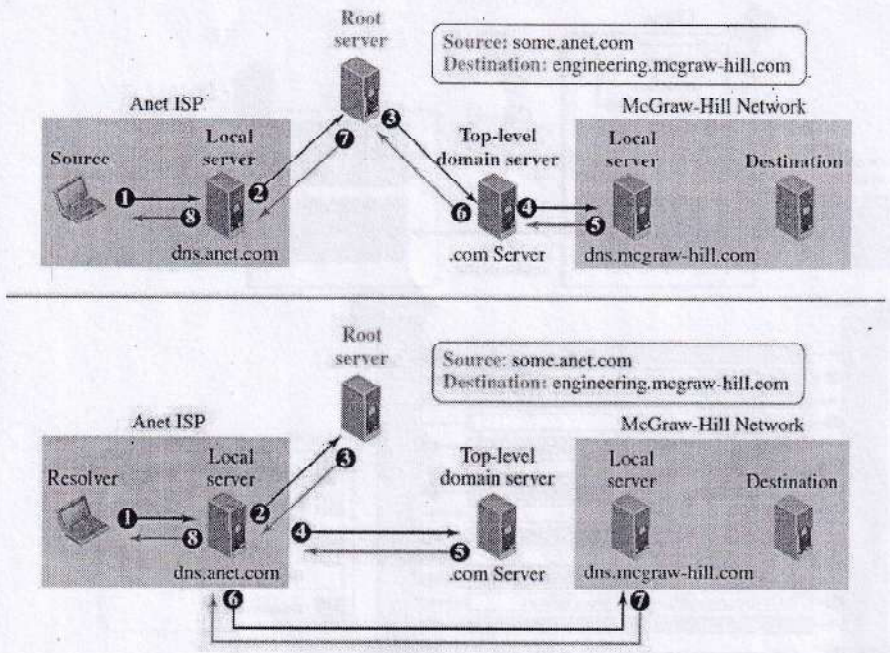
6





Explanation

8	 Explanation	
9	 Explanation	6

10	 Explanation	6

Course In charge

HOD ECE

K.S. INSTITUTE OF TECHNOLOGY, BANGALORE - 560109
FIRST INTERNAL TEST QUESTION PAPER 2022-23 ODD SEMESTER

SET: B

USN | | | | | | | | | | |

Degree : B.E
Branch : ECE
Course Title : Computer Networks
Duration : 90 Minutes

Semester : 7th
Course Code : 18EC71
Date : 27-10-2022
Max Marks : 30

Note: Answer ONE full question from each part.

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Q No.	Question	Marks	CO mapping	K-Level
	PART-A			
1(a)	**Make use of** the concept of Encapsulation & Decapsulation and Multiplexing & Demultiplexing used in internet	6	CO1	K2
(b)	**Analyze** different network topologies with advantages and disadvantages.	6	CO1	K4
(c)	**Differentiate** OSI and TCP/IP models.	6	CO1	K2
	OR			
2(a)	**Analyze** TCP/IP protocol suite with functions of each layers.	6	CO1	K4
(b)	**Explain** different forms of data representation with examples	6	CO1	K2
(c)	**Illustrate** the architecture of internet with suitable diagram	6	CO1	K2
	PART -B			
3(a)	**Evaluate** the throughout if the system produces i. 250 frames per second.ii.500 frames per second.iii.1000 frames per second. If A slotted ALOHA network transmits 100bit frames using a shared channel with a 200kbps bandwidth.	6	CO2	K4
(c)	**Make use of** FSM and Flow diagram, **Analyze** CSMA/CD random access method	6	CO2	K4
	OR			
4(a)	**Make use of** FSM and Flow diagram, **Analyze** Stop and Wait Protocol	6	CO2	K4
(b)	**Analyze** the throughput of pure ALOHA and slotted ALOHA with relevant diagrams	6	CO2	K4

Name & Signature of Course In charge | Name & Signature of Module Coordinator | HOD ECE | Principal

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU-560109

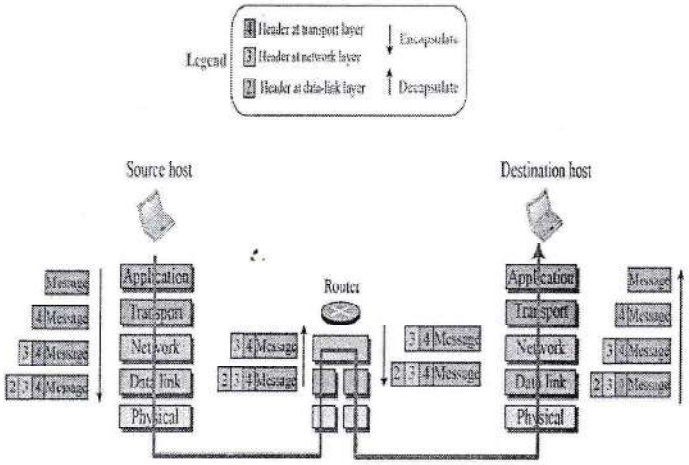
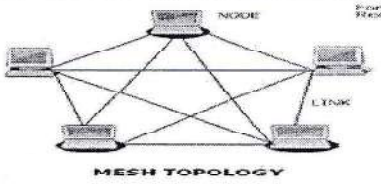
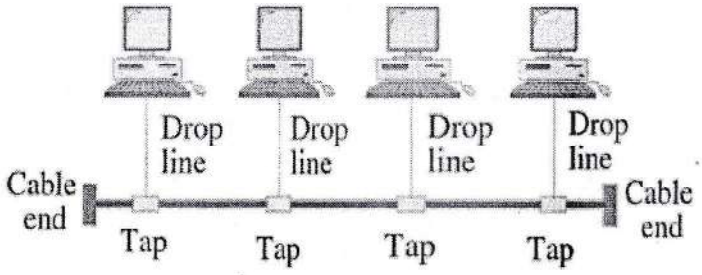
Department of Electronics & Communication Engineering

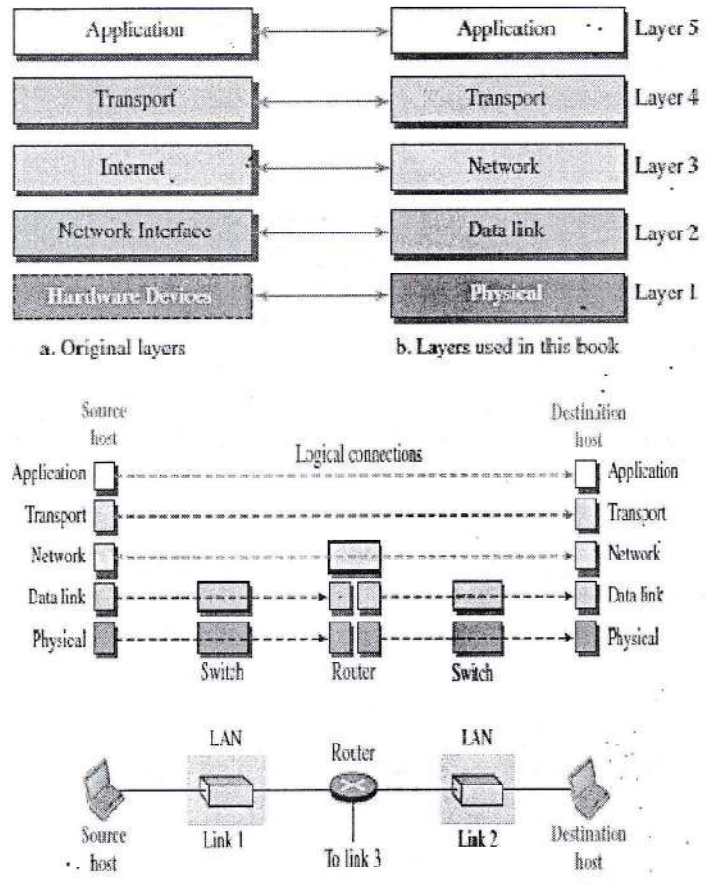
SESSION: 2022-2023 (ODDSEMESTER)

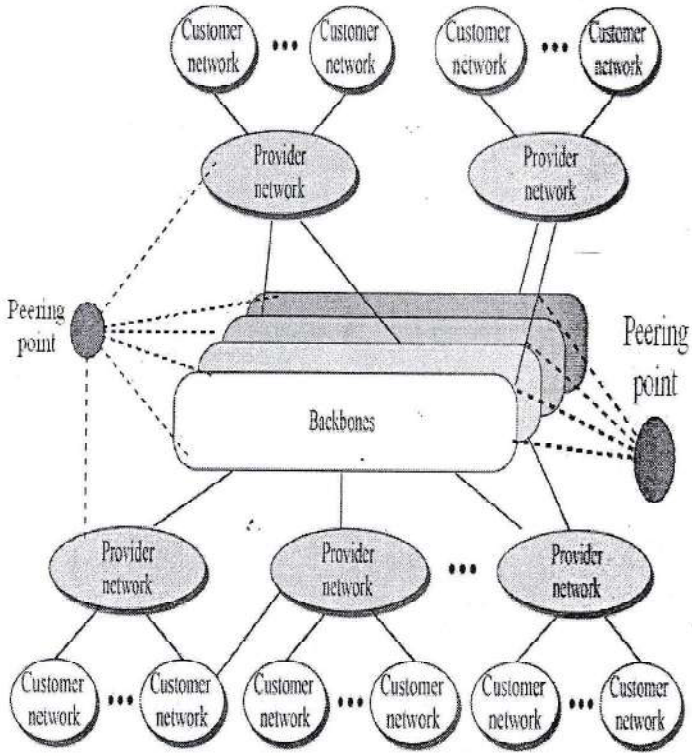
FIRST SESSIONAL TEST SCHEME & SOLUTION-SET-B

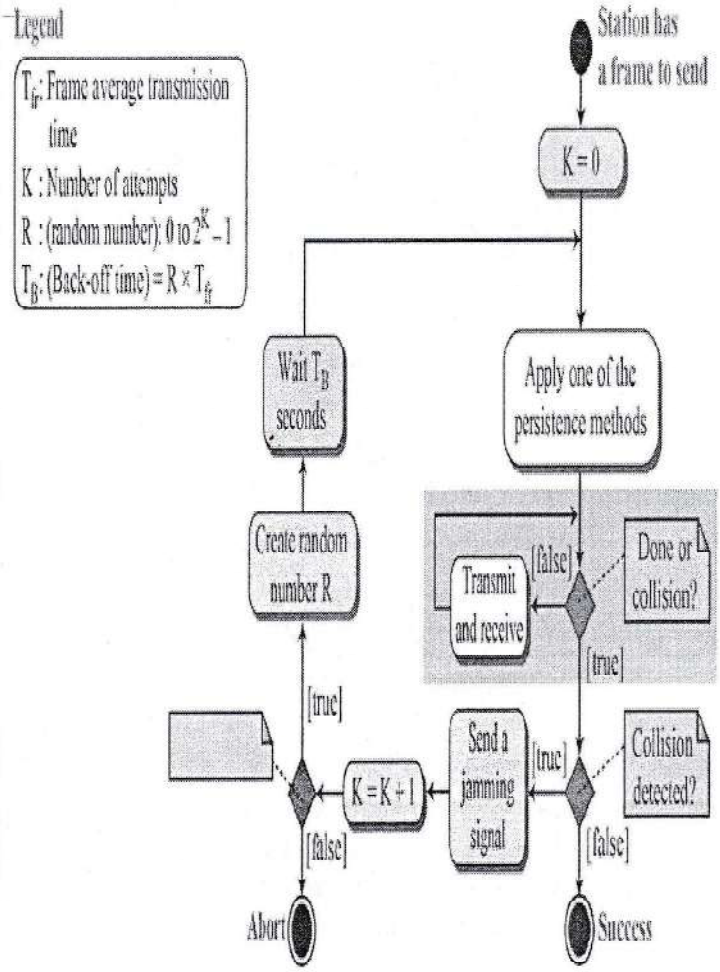
Degree	:	B.E	Semester	:	VII A & B
Branch	:	ECE	Date	:	27-10-2022
Course Title	:	Computer Networks	Course Code	:	18EC71
Duration	:	90 Minutes	Max Marks	:	30

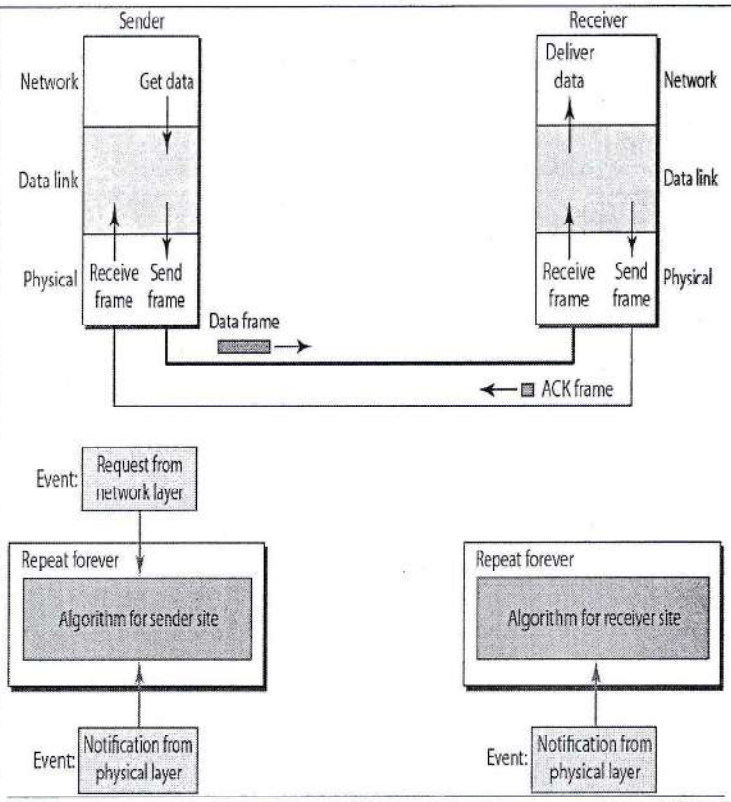
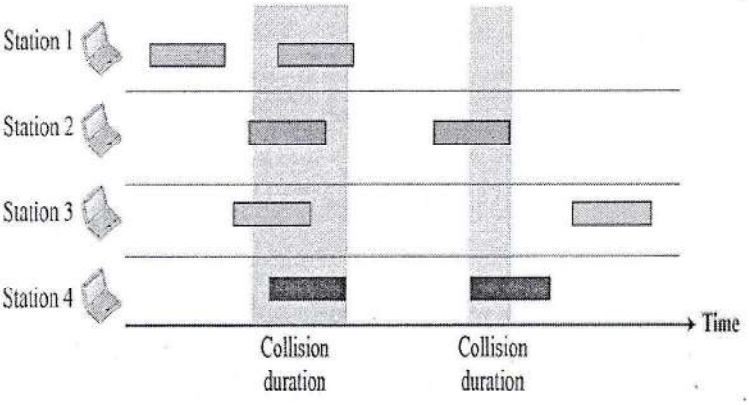
Note: Answer ONE full question from each part

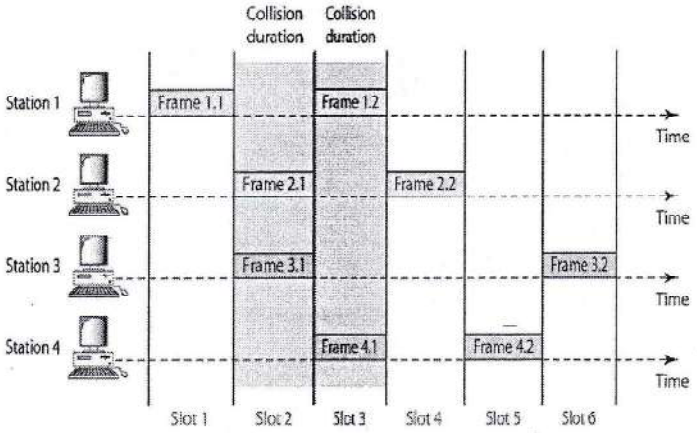
Q. No.	Scheme and Solution	Marks	K-Level	CO
	PART-A			
1(a)	Encapsulation and Decapsulation 	6M Dia 3M Exp 3M	K2 Understanding	CO1
1(b)	  Bus topology	6M Dia 3M Exp 3M	Analyzing (K4)	CO1

1(c)	TCPreferstoTransmissionControlProtocol.	OSIreferstoOpenSystemsInterconnection.	6 M	K2 Understanding	CO1
	TCP/IPhas5layers.	OSIhas7layers.	6M		
	TCP/IPismorereliable	OSIislessreliable			
	TCP/IPdoesnothaveverystrictboundaries.	OSIhasstrictboundaries			
	TCP/IPusesbothsessionandpresentationlayerintheapplicationlayeritself.	OSIusesdifferentsessionandpresentationlayers.			
	TCP/IPdevelopedprotocolsthenmodel.	OSIdevelopedmodelthenprotocol.			
		OR			
2(a)	TCP/IP protocol suite 		6M Dia 2M Exp 4M	Analyzing (K4)	CO1
2(b)	• Text : sequence of 0's and 1's		6M	K2	CO1

	• **Number:** binary form • **Images:** matrix of pixels(chess board) color image represented: RGB, YCM • **Audio:** recording / broadcasting sound/**music** (continuous) • **Video :** recording / broadcasting picture/**movie**	**Exp 6M**	**Understanding**	
2(c)		**6M** **Dia 3M** **Exp 3M**	**K2 Understanding**	**CO1**
	PART-B			
3(a)	The frame transmission time is 200/200 kbps or **1** ms. a. If the system creates 1000 frames per second, this is 1 frame per millisecond. The load is 1. In this case $S = G \times e^{-G}$ or S = 0.368 (36.8 percent). This means that the throughput is 1000 × 0.368 = 368 frames. b. If the system creates 500 frames per second, this is (1/2) frame per millisecond. The load is (1/2). In this case $S = G \times e^{-G}$ or S = 0.303. This means that the throughput is 500 × 0.303 = 152 c. If the system creates 250 frames per second, this is (1/4)	**6M** **Sol-6M**	**Analyzing (K4)**	**CO2**

	frame per millisecond. The load is (1/4). In this case $S = G \times e^{-G}$ or S = 0.194 (19.4 percent). This means that the throughput is 250 × 0.194 = 49. Only 38 frames out of 250 will probably survive			
3(b)	CSMA/CD  Stop and wait protocol	6M Dia 3M Exp 3M	Analyzing (K4)	CO2

4a		Dia 3M Exp 3M	Analyzing (K4)	CO2
	OR			
4(b)	Pure ALOHA protocol ➢ Each station sends frames whenever they have Only one channel available so collisions occur Collision destroys frames & they r retransmitted Relies on ACK n then retransmits frame  Slotted ALOHA protocol	6M Dia 3M Exp 3M	Analyzing (K4)	CO2

	➢ Divide time slots **of Tfr** seconds ➢ Stations can send **only** at beginning  			

Course In-charge

HOD ECE

K.S. INSTITUTE OF TECHNOLOGY, BANGALORE - 560109

FIRST INTERNAL TEST QUESTION PAPER 2022-23 ODD SEMESTER

SET: A

USN | | | | | | | | | | |

Degree : B.E
Branch : ECE
Course Title : Computer Networks
Duration : 90 Minutes

Semester : 7th
Course Code : 18EC71
Date : 27-10-2022
Max Marks : 30

Note: Answer ONE full question from each part.

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Q No.	Question	Marks	CO mapping	K-Level
	PART-A			
1(a)	**Analyze** TCP/IP protocol suite with functions of each layers.	6	CO1	K4
(b)	**Illustrate** the architecture of internet with suitable diagram	6	CO1	K2
(c)	**Explain** the components of data communication with neat diagram	6	CO1	K2
	OR			
2(a)	**Illustrate** i) Circuit switching ii) Packet Switching with relevant diagrams	6	CO1	K2
(b)	**Analyze** different network topologies with advantages and disadvantages.	6	CO1	K4
(c)	**Build** the following with networks relevant diagrams i. LAN ii. WAN	6	CO1	K3
	PART -B			
3(a)	**Evaluate** the throughout if the system produces i. 1000 frames per second.ii.500 frames per second.iii.250 frames per second. If A pure ALOHA network transmits 200 bit frames using a shared channel with a 200kbps bandwidth.	6	CO2	K4
(c)	**Illustrate** Bit stuffing and byte stuffing with example.	6	CO2	K2
	OR			
4(a)	**Illustrate** the following controlled access protocols with relevant diagrams i) Token passing ii) Reservation	6	CO2	K2
(b)	**Interpret** three persistence methods of CSMA with flow diagrams	6	CO2	K2

Dinesh
Name & Signature of Course In charge

Name & Signature of Module Coordinator

HOD ECE

Principal

Selected

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU-560109

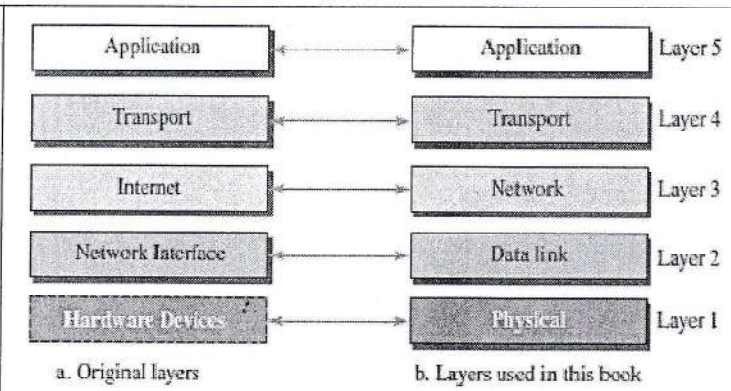
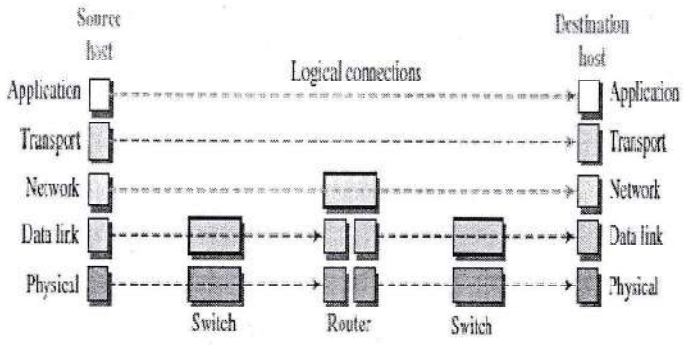
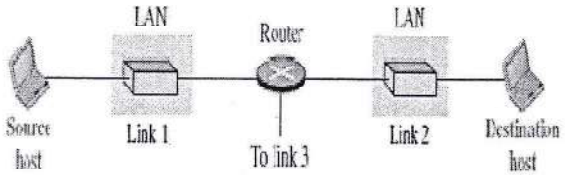
Department of Electronics & Communication Engineering

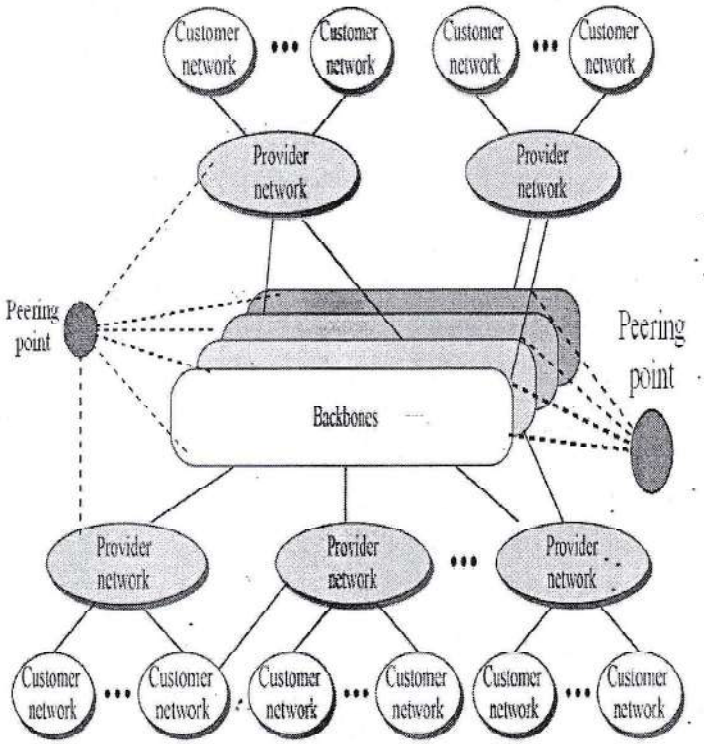
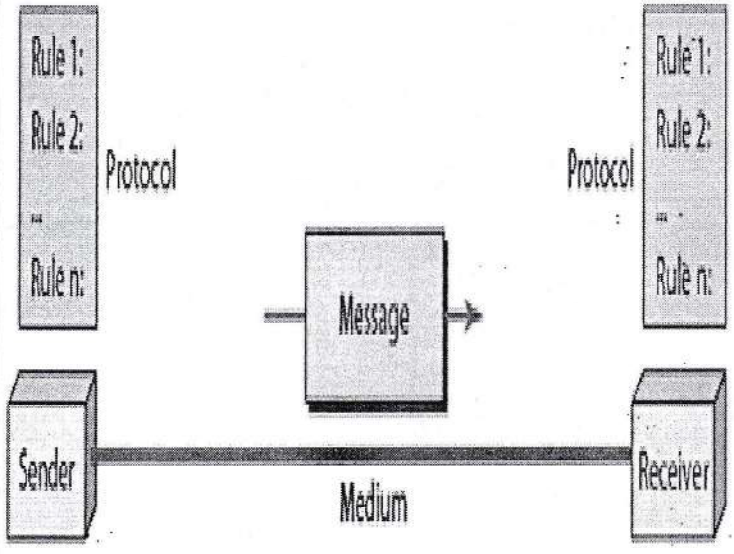
SESSION: 2021-2022 (EVEN SEMESTER)

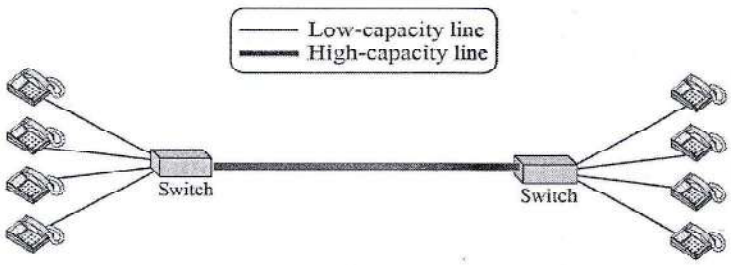
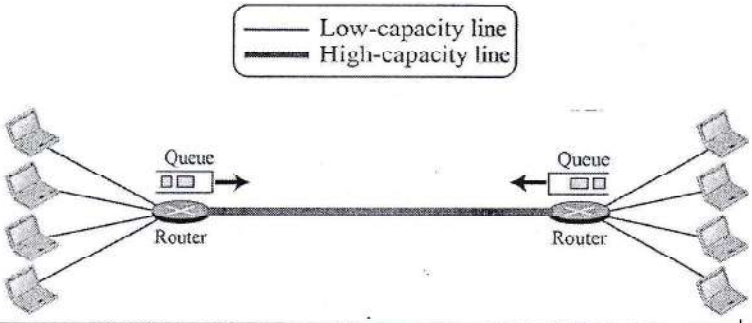
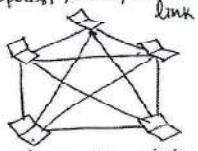
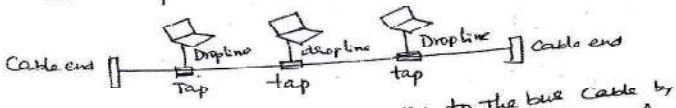
FIRST SESSIONAL TEST SCHEME & SOLUTION-SET-A

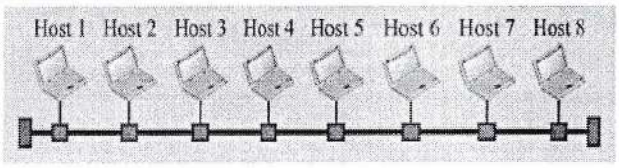
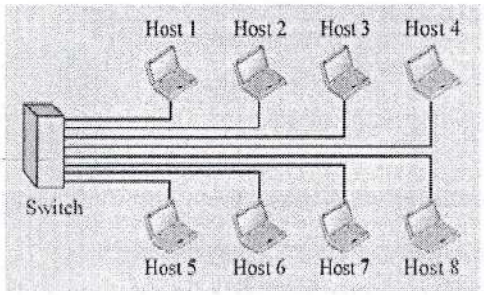
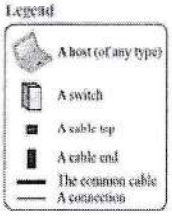
Degree	:	B.E	Semester	:	VII A & B
Branch	:	ECE	Date	:	27-10-2022
Course Title	:	Computer Networks	Course Code	:	18EC71
Duration	:	90 Minutes	Max Marks	:	30

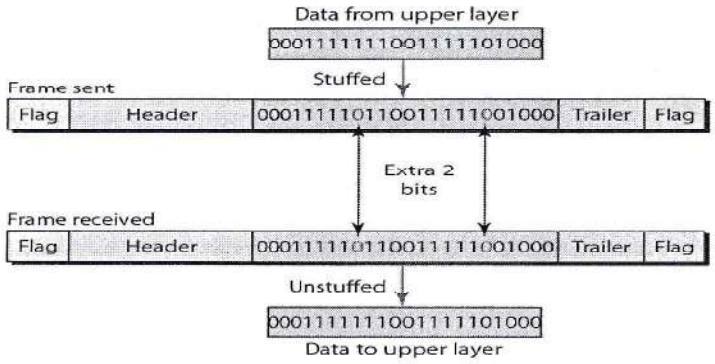
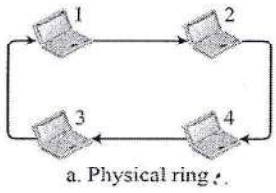
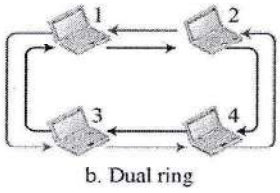
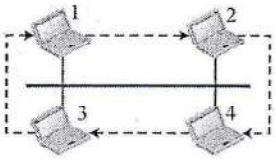
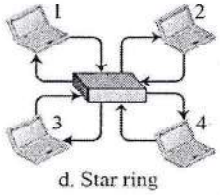
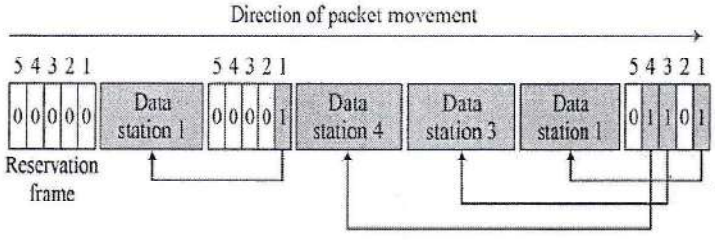
Note: Answer ONE full question from each part

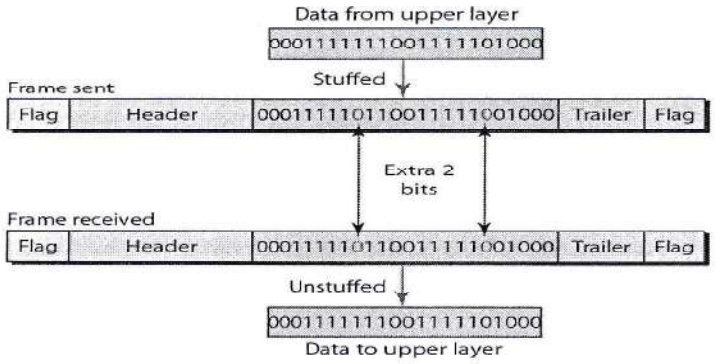
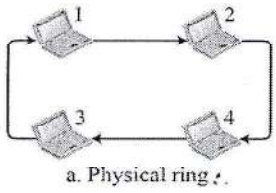
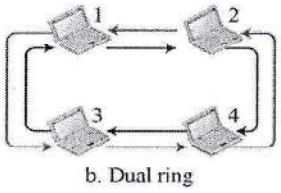
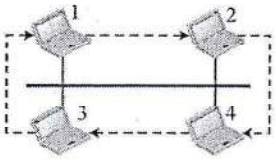
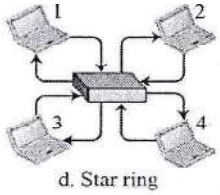
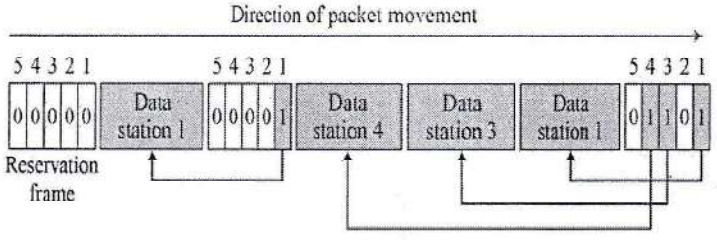
Q. No.	Scheme and Solution	Marks	K Level	CO
	PART-A			
1(a)		6M	Analyzing (K4)	CO1
		Dia-3M		
		Exp-3M		
	Any One diagram can be drawn and detailed explanation related to the diagram is equally must.			

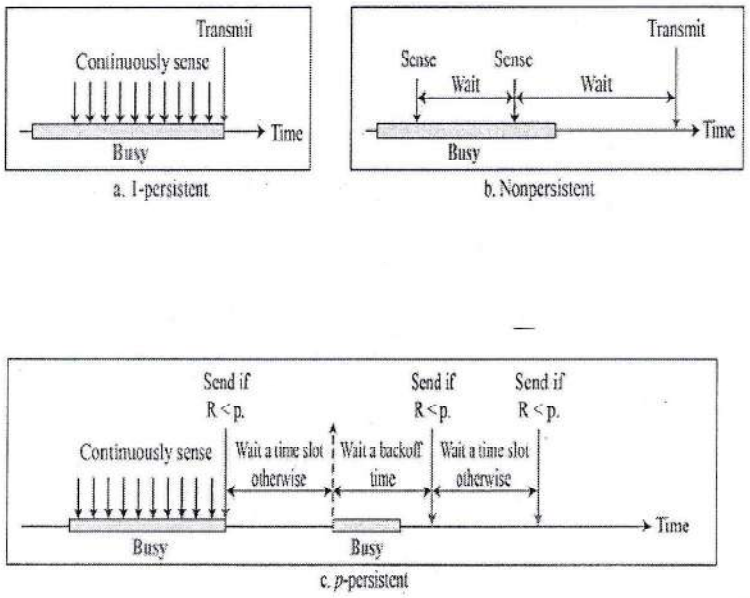
1(b)		6M Dia 3M Exp 3M	K2 Understanding	CC
1(c)		6 M Dia-2M Exp-4M	K2 Understanding	CC
	OR			

2(a)	Circuit switching  Packet switching  	6M Dia-2M Exp-4M	K2 Understanding	CO1
2(b)	1) Mesh topology: Consider a fully connected mesh topology (5 devices) In mesh topology, every device has a dedicated point-to-point link to every other device.  No of links is given by here n=5 $N = \frac{n(n-1)}{2}$ $N = \frac{5(5-1)}{2} = 10$ Advantages:- ① traffic is reduced because of dedicated paths between devices ② if any one link is unusable, it does not affect the system performance capacity. ③ provides privacy or security because of dedicated path Bus topology:- It is multipoint where all devices share common path or link.  Here Nodes are connected to the bus cable by drop lines & taps. This topology is suitable for data communication. Advantage:- ① ease of installation disadvantage 1) troubleshooting & fault location is difficult	6M Dia-3M Exp-3M	Analyzing (K4)	CO1

2(c)	 a. LAN with a common cable (past)  b. LAN with a switch (today) 	6M Dia-3M Exp-3M	K2 Understanding	CO1
	PART-B			
3(a)	The frame transmission time is 200/200 kbps or 1 ms. a. If the system creates 1000 frames per second, this is 1 frame per millisecond. The load is 1. In this case $S = G \times e^{-2G}$ or $S = 0.135$ (13.5 percent). This means that the throughput is $1000 \times 0.135 = 135$ frames. Only 135 frames out of 1000 will probably survive. b. If the system creates 500 frames per second, this is (1/2) frame per millisecond. The load is (1/2). In this case $S = G \times e^{-2G}$ or $S = 0.184$ (18.4 percent). This means that the throughput is $500 \times 0.184 = 92$ and that only 92 frames out of 500 will probably survive. Note that this is the maximum throughput case, percentagewise. c. If the system creates 250 frames per second, this is (1/4) frame per millisecond. The load is (1/4). In this case $S = G \times e^{-2G}$ or $S = 0.152$ (15.2 percent). This means that the throughput is $250 \times 0.152 = 38$. Only 38 frames out of 250 will probably survive	6M Sol 6M	Analyzing (K4)	CO2

	Bit stuffing is the process of adding one extra 0 whenever five consecutive 1s follow a 0 in the data, so that the receiver does not mistakethe pattern 0111110 for a flag.  	6M Dia 2M Exp 4M	K2 Understanding	CO2
3b	1.Token passing  a. Physical ring  b. Dual ring	6M	K2 Understanding	CO2
4a	 c. Bus ring  d. Star ring ii. reservation: here all stations communicate & decide who should send frames  	Dia-3M Exp-3M		
	OR			

	Bit stuffing is the process of adding one extra 0 whenever five consecutive 1s follow a 0 in the data, so that the receiver does not mistakethe pattern 0111110 for a flag. 	**6M** **Dia 2M** **Exp 4M**	**K2 Understanding**	**CO2**
3b	1.Token passing  a. Physical ring  b. Dual ring	**6M**	**K2 Understanding**	**CO2**
4a	 c. Bus ring  d. Star ring ii. reservation: here all stations communicate & decide who should send frames 	**Dia-3M** **Exp-3M**		
	OR			

4(b)	3 persistence methods  	6M Dia-3M Exp-3M	K2 Understanding	CO2

Course In charge

HOD ECE

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
SECOND INTERNAL TEST QUESTION PAPER 2022-23ODD SEMESTER

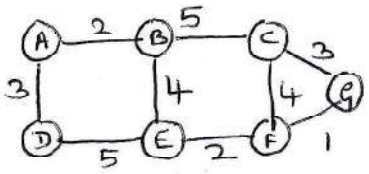
SET: A

USN | | | | | | | | | | |

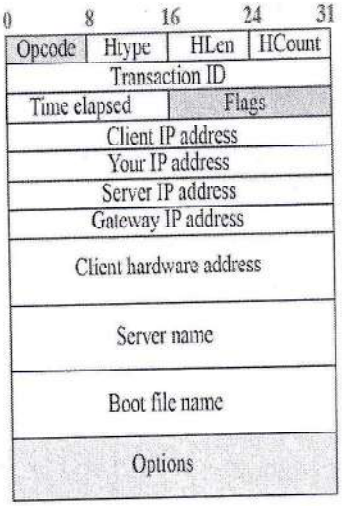
Degree	: **B.E.,**	**Semester**	: **VII**
Branch	: **ECE**	**Course Code**	: **18EC71**
Course Title	: **Computer Networks**	**Date**	: **28/11/2022**
Duration	: **90 Minutes**	**Max Marks**	: **30**

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Note: Answer ONE full question from each part.

Q No.	Question	Marks	CO mapping	K-Level
	Part-A			
1(a)	Discuss different services provided by network layer	6	CO3	K2
(b)	Analyze link state routing with link state database for the below network 	6	CO3	K4
(c)	Explain DHCP message format with neat diagram	6	CO3	K2
2(a)	A block of address is granted to a small organization.one of the address is 205.16.37.39/28.Evaluate first address, last address and number of addresses.	6	CO3	K4
(b)	Analyze IPV4 datagram format with all the necessary fields	6	CO3	K4
(c)	Analyze path vector routing with example (consider 5 nodes)	6	CO3	K4
	Part-B			
3(a)	Analyze different addressing mechanisms used in wireless LAN	6	CO2	K4
(b)	Discuss the general services provided by transport layer	6	CO4	K2
4(a)	Explain standard Ethernet frame format with neat diagram	6	CO2	K2
(b)	Analyze stop and wait protocol with FSM of transport layer	6	CO4	K4

Name &Signature of Course In charge | Name &Signature of Module Coordinator | HOD ECE | Principal

1(c)	*Figure 18.25: DHCP message format*  Fields: Opcode: Operation code, request (1) or reply (2) Htype: Hardware type (Ethernet, ...) HLen: Length of hardware address HCount: Maximum number of hops the packet can travel Transaction ID: An integer set by client and repeated by the server Time elapsed: The number of seconds since the client started to boot Flags: First bit defines unicast (0) or multicast (1); other 15 bits not used Client IP address: Set to 0 if the client does not know it Your IP address: The client IP address sent by the server Server IP address: A broadcast IP address if client does not know it Gateway IP address: The address of default router Server name: A 64-byte domain name of the server Boot file name: A 128-byte file name holding extra information Options: A 64-byte field with dual purpose described in text 18.51	6 M Dia- 3M Exp- 3M	K2	CO3
	OR			
2(a)	Solu:- The binary representation of given address is 205. 16. 37. 39 |28 11001101 00010000 00100101 00100111 if we set 32-28 rightmost bits to '0', we get 11001101 00010000 00100101 00100000 or 205. 16. 37. 32 Last address:- The last address in the block can be found by setting the rightmost 32-n bits to 1's. Ex:- The binary representation of the given address is 11001101 00010000 00100101 00100111 if we set 32-28 rightmost bits to 1, we get 11001101 00010000 00100101 00101111 or 205. 16. 37. 47. Number of addresses:- The no of addresses in the block is the difference b/w the last & first address. It is given by 2^{32-n} Solu:- In this Example n= 28 $\therefore 2^{32-28} = 2^4 = 16$ addresses.	6M Sol- 6M	K4	CO3

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU-560109

Department of Electronics & Communication Engineering

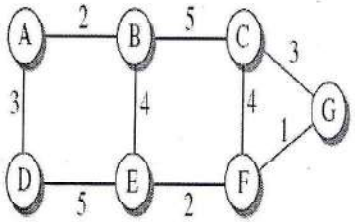
SESSION: 2022-2023 (ODD SEMESTER)

SECOND INTERNAL TEST SCHEME & SOLUTION-SET-A

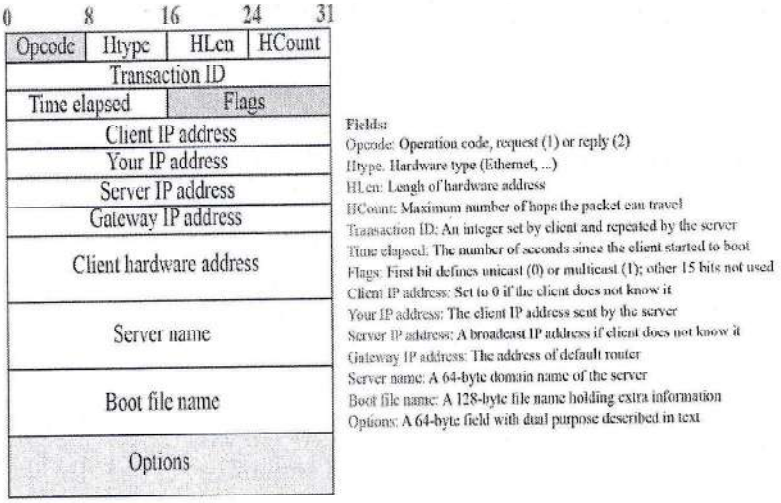
Degree	:	**B.E**	**Semester**	:	**VII A & B**
Branch	:	**ECE**	**Date**	:	**28-11-2022**
Course Title	:	**Computer Networks**	**Course Code**	:	**18EC71**
Duration	:	**90 Minutes**	**Max Marks**	:	**30**

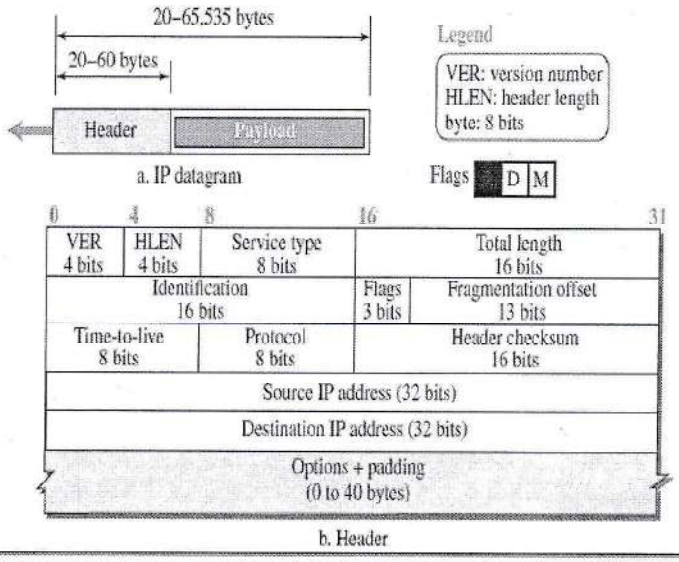
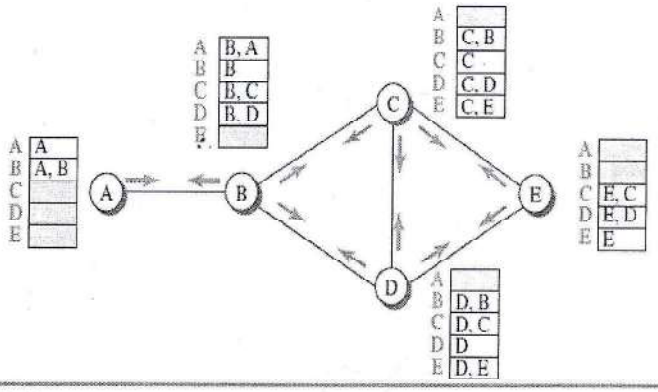
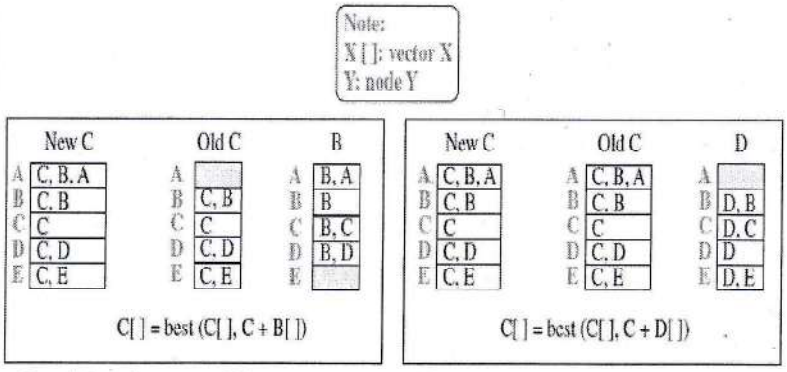
Note: Answer ONE full question from each part

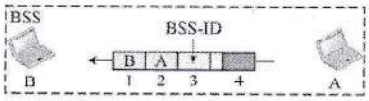
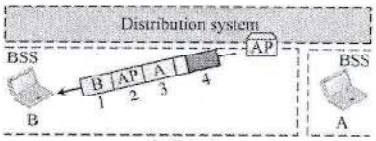
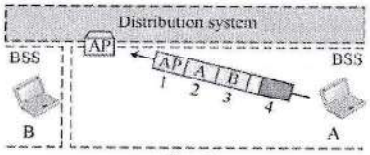
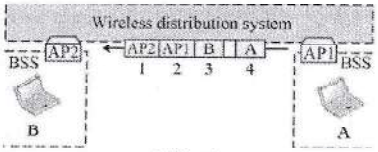
K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

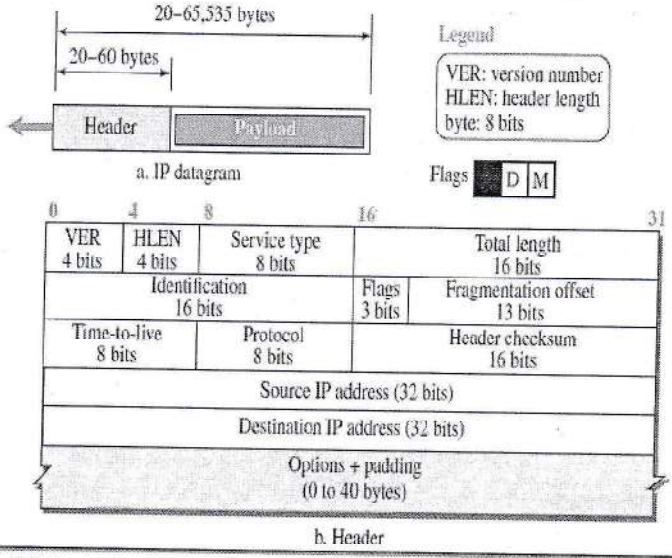
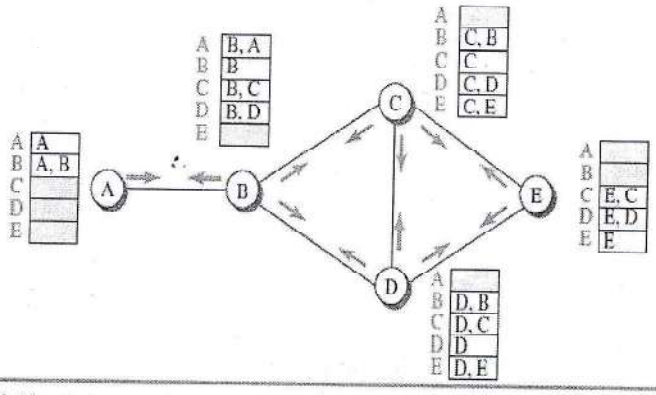
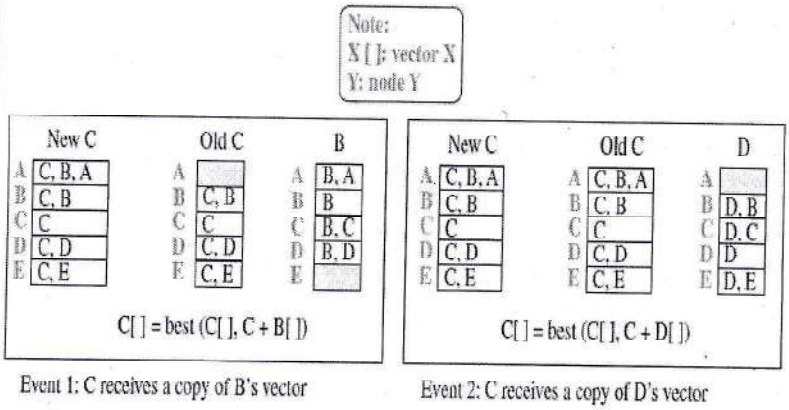
Q. No.	Scheme and Solution	Marks	K Level	CO
	PART-A			
1(a)	➢ Packetizing: Carry payload from source to destination Source cannot change payload content Routers cannot decapsulate ➢ Routing : Find the best possible routes ➢ Forwarding : action applied by each router when a packet arrives at one of its interfaces ➢ Error control: Has header checksum (Internet Control Message Protocol). ➢ Flow control: Upper layers (Transport layer) implement flow control. ➢ Congestion control: too many datagram's present. ➢ Quality of service: thrives to provide better quality of service	**6M** **6 services-6M**	**K2**	**CO3**
1(b)	Figure 20.8 *Example of a link-state database*  a. The weighted graph b. Link state database	**6M** **Sol-6M**	**K4**	**CO3**

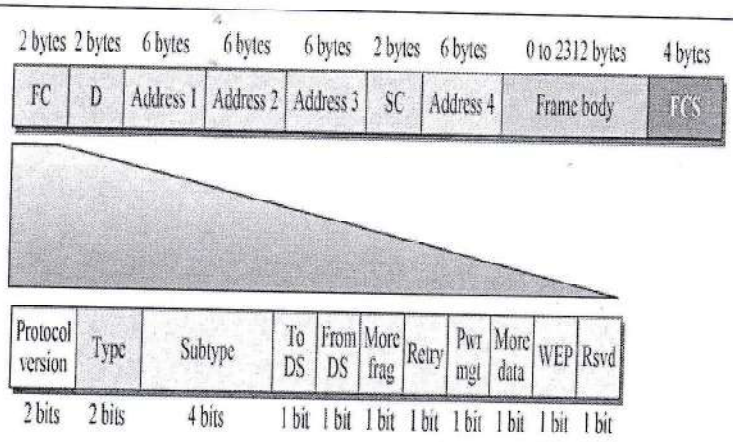
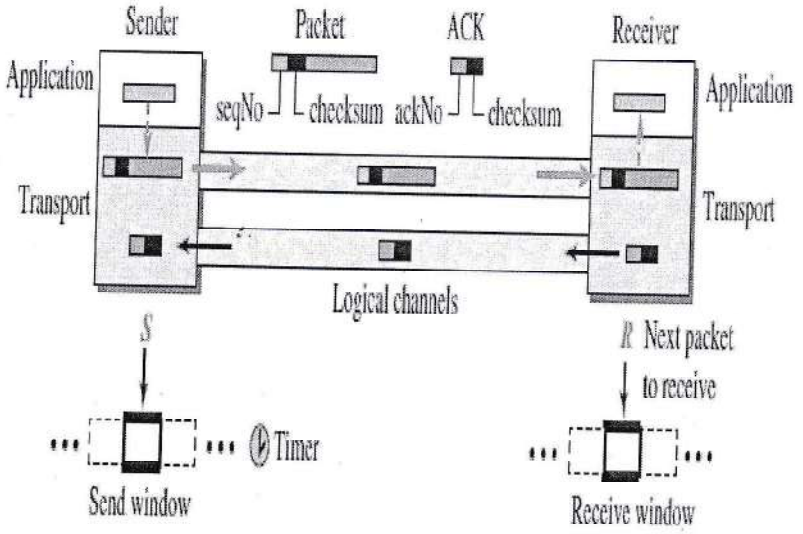
	A	B	C	D	E	F	G
A	0	2	∞	3	∞	∞	∞
B	2	0	5	∞	4	∞	∞
C	∞	5	0	∞	∞	4	3
D	3	∞	∞	0	5	∞	∞
E	∞	4	∞	5	0	2	∞
F	∞	∞	4	∞	2	0	1
G	∞	∞	3	∞	∞	1	0

1(c)	*Figure 18.25: DHCP message format*  18.51	6 M Dia- 3M Exp- 3M	K2	CO3
	OR			
2(a)	Solu:- The binary representation of given address is 205. 16. 37. 39 |28 11001101 00010000 00100101 00100111 if we set 32-28 rightmost bits to '0', we get 11001101 00010000 00100101 00100000 or 205. 16. 37. 32 Last address:- The last address in the block can be found by setting the rightmost 32-n bits to 1's. Ex:- The binary representation of the given address is 11001101 00010000 00100101 00100111 if we set 32-28 bits rightmost bits to 1, we get 11001101 00010000 00100101 00101111 or 205. 16. 37. 47. Number of addresses:- The no of addresses in the block is the difference b/w the last & first address & is given by 2^{32-n} Solu:- In this example $n = 28$ $\therefore 2^{32-28} = 2^4 = 16$ addresses.	6M Sol- 6M	K4	CO3

2(b)	Figure 19.2 *IP datagram*  	6M Dia- 3M Exp- 3M	K4	CO3
2(c)	Figure 20.12 *Path vectors made at booting time*  Figure 20.13 *Updating path vectors*  	6M Sol-6M	K4	CO3

PART-B				
3(a)	<table><tr><th>To DS</th><th>From DS</th><th>Address 1</th><th>Address 2</th><th>Address 3</th><th>Address 4</th></tr><tr><td>0</td><td>0</td><td>Destination</td><td>Source</td><td>BSS ID</td><td>N/A</td></tr><tr><td>0</td><td>1</td><td>Destination</td><td>Sending AP</td><td>Source</td><td>N/A</td></tr><tr><td>1</td><td>0</td><td>Receiving AP</td><td>Source</td><td>Destination</td><td>N/A</td></tr><tr><td>1</td><td>1</td><td>Receiving AP</td><td>Sending AP</td><td>Destination</td><td>Source</td></tr></table>  a. Case 1  b. Case 2  c. Case 3  d. Case 4	6M Table- 2M Exp-4M	K4	CO2
3b	Transport layer services: 1.process to process communication 2.Addreessing :port numbers AProcessesisidentifiedwith***portnumbers.*** InthcTCP/IPprotocolsuite,theportnumbersareintegersbetween0and65,535(16bits). MultipleclientProgramsrunsonacomputer Theclientprogramdefinesitselfwithaportnumber,calledtheephemeral[short-lived] portnumber Anephemeralportnumberisrecommendedtobegreaterthan1023forsomeclient/serverprogramstoworkperly. Theserverprocess[portnumber]howcvcr,cannotbechosenrandomly. TCP/IPhasdecidedtouseuniversalportnumbersforservers;[well-knownportnumbers] Everyclientprocessknowsthewell-knownportnumberofthecorrespondingserverprocess	6M 6 services-6M	K2	CO4

2(b)	Figure 19.2 *IP datagram*  	6M Dia- 3M Exp- 3M	K4	CO3
2(c)	Figure 20.12 *Path vectors made at booting time*  Figure 20.13 *Updating path vectors*  Event 1: C receives a copy of B's vector Event 2: C receives a copy of D's vector	6M Sol-6M	K4	CO3

4a		6M Dia-3M Exp-3M	K2	CO2
	OR			
4(b)	Figure 23.20 *Stop-and-Wait protocol* 	6M Dia-3M Exp-3M	K4	CO4

Course In charge

Module coordinator

HOD ECE

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
SECOND INTERNAL TEST QUESTION PAPER 2022-23ODD SEMESTER

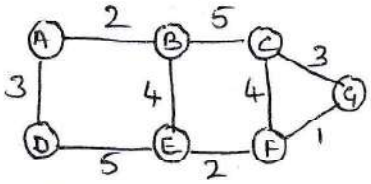
SET: B

USN | | | | | | | | | | |

Degree	: **B.E.,**	**Semester**	: **VII**
Branch	: **ECE**	**Course Code**	: **18EC71**
Course Title	: **Computer Networks**	**Date**	: **28/11/2022**
Duration	: **90 Minutes**	**Max Marks**	: **30**

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Note: Answer ONE full question from each part.

Q No.	Question	Marks	CO mapping	K-Level
	Part-A			
1(a)	Illustrate datagram approach and virtual circuit approach in packet switching with relevant diagram	6	CO3	K2
(b)	Analyze link state routing with link state database for the below network 	6	CO3	K4
(c)	Analyze DHCP protocol operation with flowchart	6	CO3	K4
2(a)	An organization is granted a block of address with beginning address 14.24.74.0/24. design a sub blocks with i.10 ii.60 & iii.120 addresses	6	CO3	K4
(b)	Analyze IPV4 datagram format with all the necessary fields	6	CO3	K4
(c)	Analyze distance vector routing using bellman ford equations	6	CO3	K4
	Part-B			
3(a)	Describe various fields of ARP packet format with neat diagram	6	CO2	K2
(b)	Analyze selective repeat protocol with FSM	6	CO4	K4
4(a)	Explain IEEE802.11 frame format with neat diagram	6	CO2	K2
(b)	Analyze Go –Back-N protocol with FSM	6	CO4	K4

Dinesh

Name &Signature of Course In charge | **Name &Signature of Module Coordinator** | **HOD ECE** | **Principal**

Selected

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU-560109

Department of Electronics & Communication Engineering

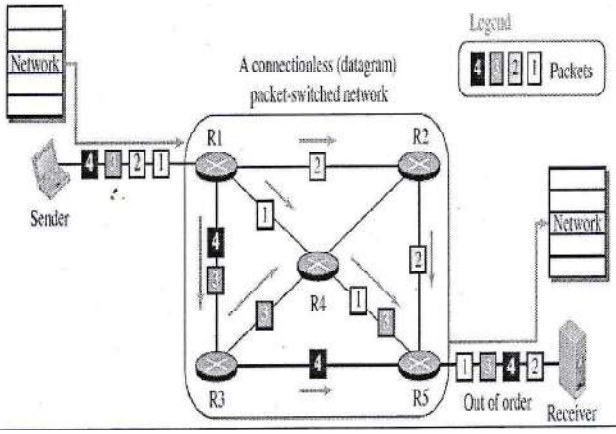
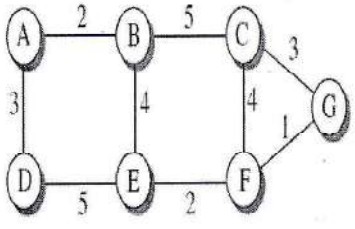
SESSION: 2022-2023 (ODD SEMESTER)

SECOND INTERNAL TEST SCHEME & SOLUTION-SET-B

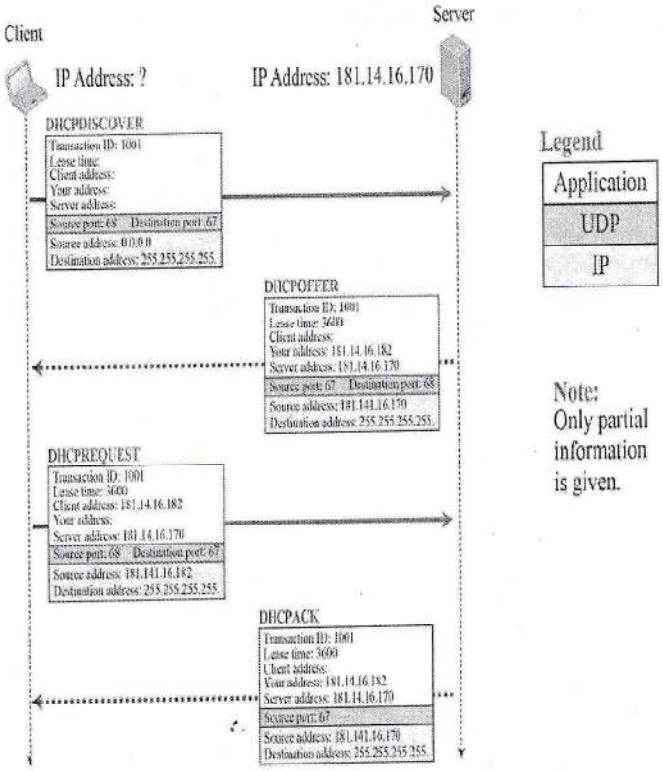
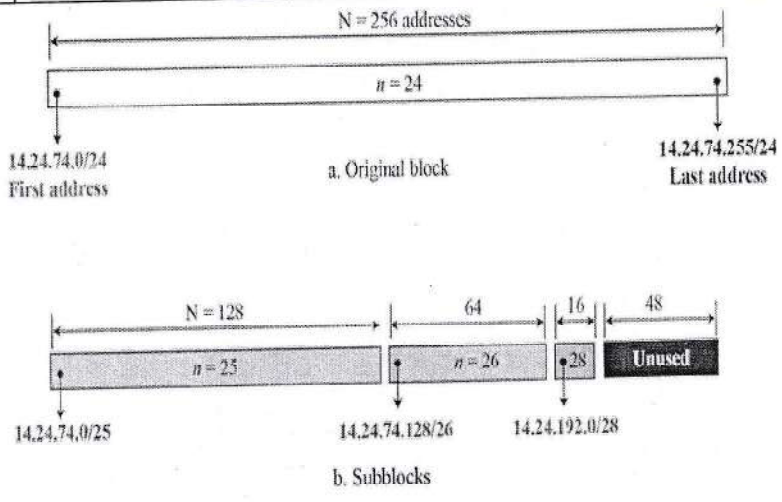
Degree	:	**B.E**	**Semester**	:	**VII A & B**
Branch	:	**ECE**	**Date**	:	**28-11-2022**
Course Title	:	**Computer Networks**	**Course Code**	:	**18EC71**
Duration	:	**90 Minutes**	**Max Marks**	:	**30**

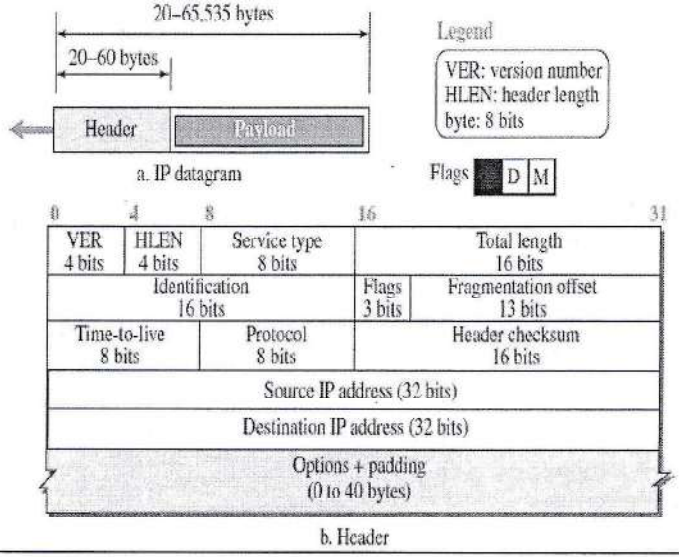
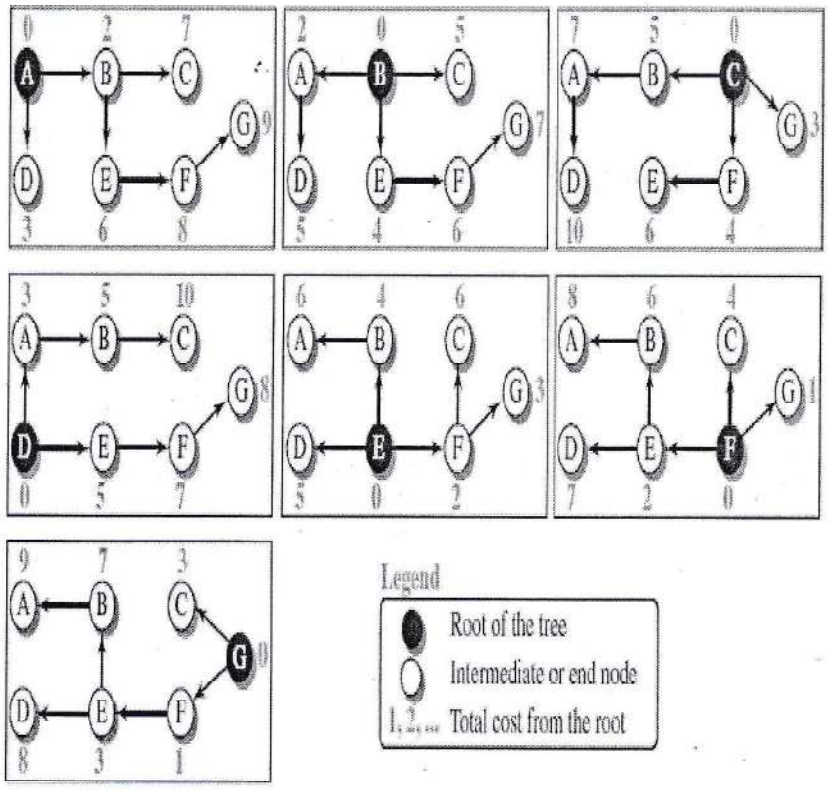
Note: Answer ONE full question from each part

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

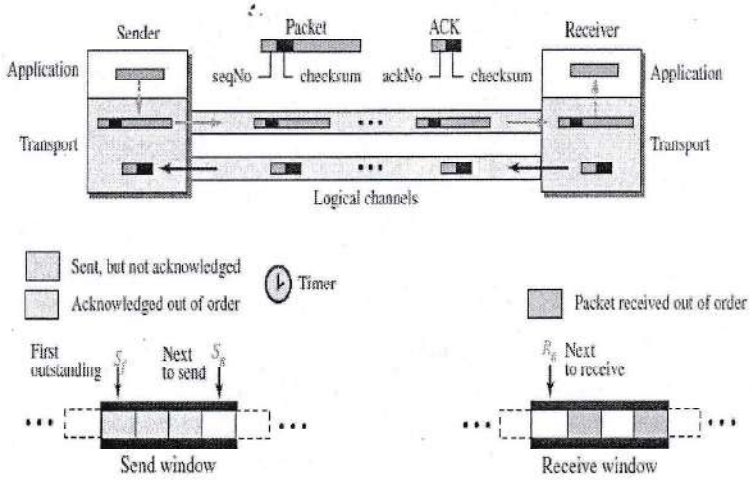
Q. No.	Scheme and Solution	Marks	K Level	CO
	PART-A			
1(a)	Figure 18.3 *A connectionless packet-switched network* 	**6M** **Dia-3M** **Exp-3M**	**K2**	**CO3**
1(b)	Figure 20.8 *Example of a link-state database*  a. The weighted graph b. Link state database	**6M** **Sol-6M**	**K4**	**CO3**

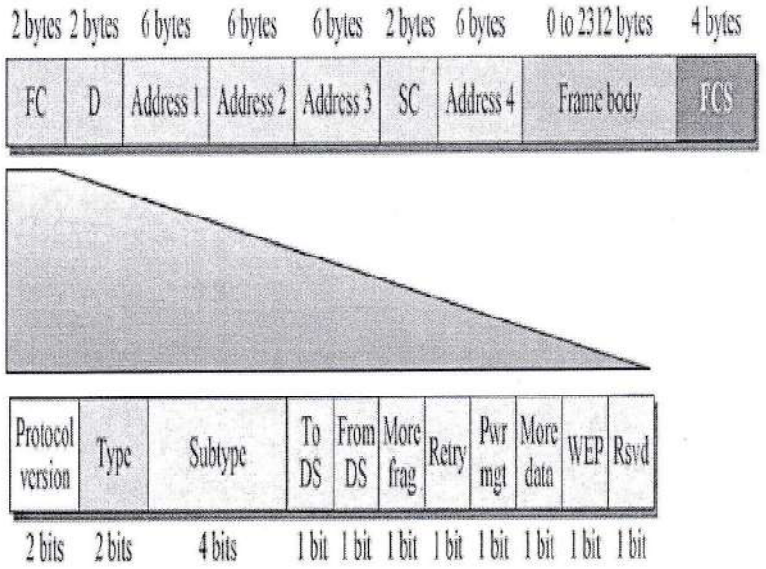
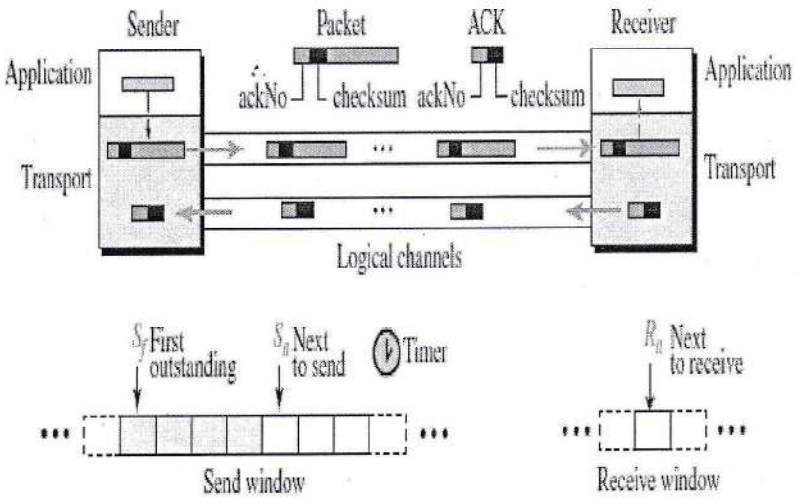
	A	B	C	D	E	F	G
A	0	2	∞	3	∞	∞	∞
B	2	0	5	∞	4	∞	∞
C	∞	5	0	∞	∞	4	3
D	3	∞	∞	0	5	∞	∞
E	∞	4	∞	5	0	2	∞
F	∞	∞	4	∞	2	0	1
G	∞	∞	3	∞	∞	1	0

1(c)	*Figure 18.27: Operation of DHCP*  	6 M Dia- 4M Exp- 2M	K2	CO3
	OR			
2(a)	 	6M Sol- 6M	K4	CO3

2(b)	Figure 19.2 *IP datagram*  	6M Dia- 3M Exp- 3M	K4	CO3
2(c)	Figure 20.2 *Least-cost trees for nodes in the internet of Figure 20.1*  	6M Sol-6M	K4	CO3

PART-B

3(a)	**Hardware:** LAN or WAN protocol **Protocol:** Network-layer protocol 0 8 16 31 Hardware Type | Protocol Type Hardware length | Protocol length | Operation Request:1, Reply:2 Source hardware address Source protocol address Destination hardware address (Empty in request) Destination protocol address	**6M** **Dia- 3M** **Exp- 3M**	**K4**	**CO2**
3b	Figure 23.31 *Outline of Selective-Repeat*  	**6M** **Dia- 3M** **Exp- 3M**	**K2**	**CO4**

4a		6M Dia-3M Exp-3M	K2	CO2
	OR			
4(b)	Figure 23.23 *Go-Back-N protocol* 	6M Dia-3M Exp-3M	K4	CO4

Course In charge

Module coordinator

HOD ECE

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
THIRD INTERNAL TEST QUESTION PAPER 2022-23ODD SEMESTER

SET: A

USN | | | | | | | | | | |

Degree	: **B.E.**	**Semester**	: **VII**
Branch	: **E&CE**	**Course Code**	: **18EC71**
Course Title	: **Computer Networks**	**Date**	: **22/12/2022**
Duration	: **90 Minutes**	**Max Marks**	: **30**

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Note: Answer ONE full question from each part.

Q No.	Question	Marks	CO mapping	K-Level
	Part-A			
1(a)	Construct the architecture of E-mail with neat diagram	6	CO5	K3
(b)	Analyze data connection used in FTP	6	CO5	K4
(c)	Build WWW architecture with neat diagram	6	CO5	K3
2(a)	Construct FTP model with neat diagram	6	CO5	K3
(b)	Analyze i. Persistent ii. non persistent connections of HTTP with relevant diagrams	6	CO5	K4
(c)	Construct DNS model with neat diagram	6	CO5	K3
	Part-B			
3(a)	Solve i. Source port number ii. Destination port number iii.Length of the user datagram iv.length of data for the UDP headerv.is the packet is from client to server or vice versa vi.What is the client process in the following hexadecimal format-CB84000D001C001C	6	CO4	K4
(b)	Analyze TCP three-way handshaking with flowchart	6	CO4	K4
4(a)	Analyze TCP segment format with relevant fields	6	CO4	K4
(b)	Analyze sending buffers and receiving buffers used in TCP	6	CO4	K4

Name &Signature of Course In charge | Name &Signature of Module Coordinator | HOD ECE | Principal

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU-560109

Department of Electronics & Communication Engineering

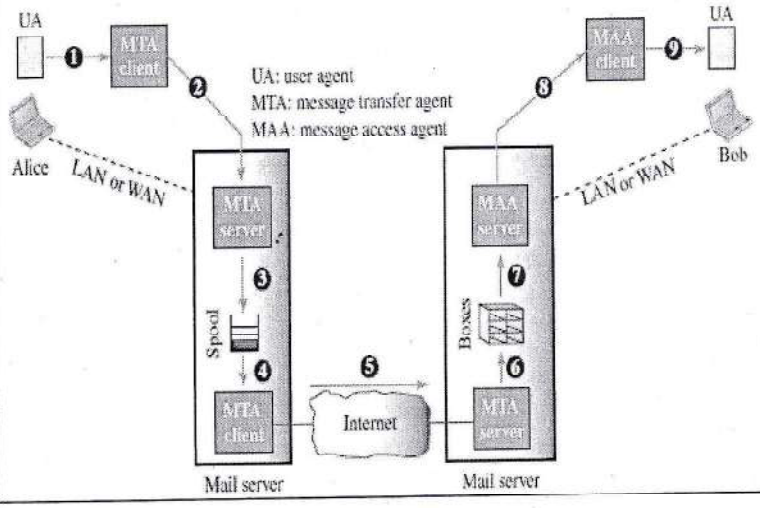
SESSION: 2022-2023 (ODD SEMESTER)

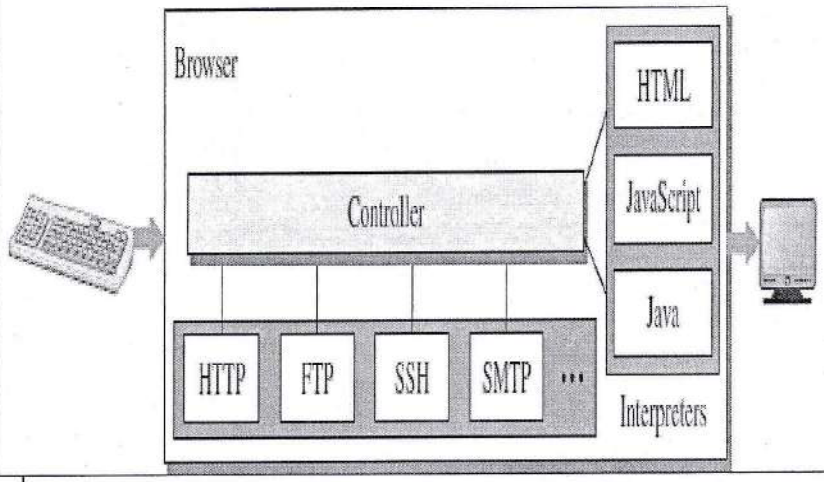
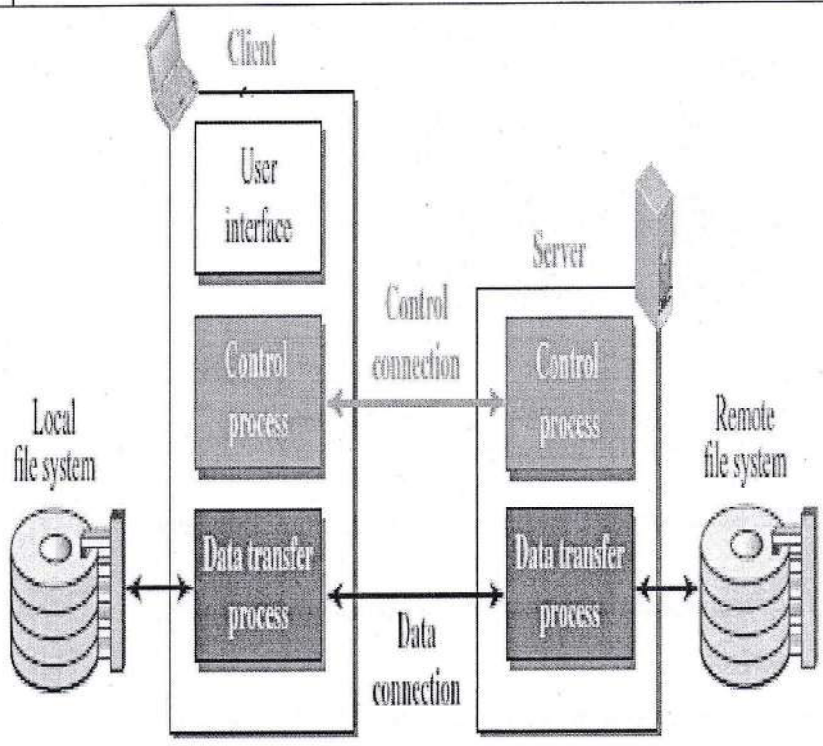
THIRD INTERNAL TEST SCHEME & SOLUTION-SET-A

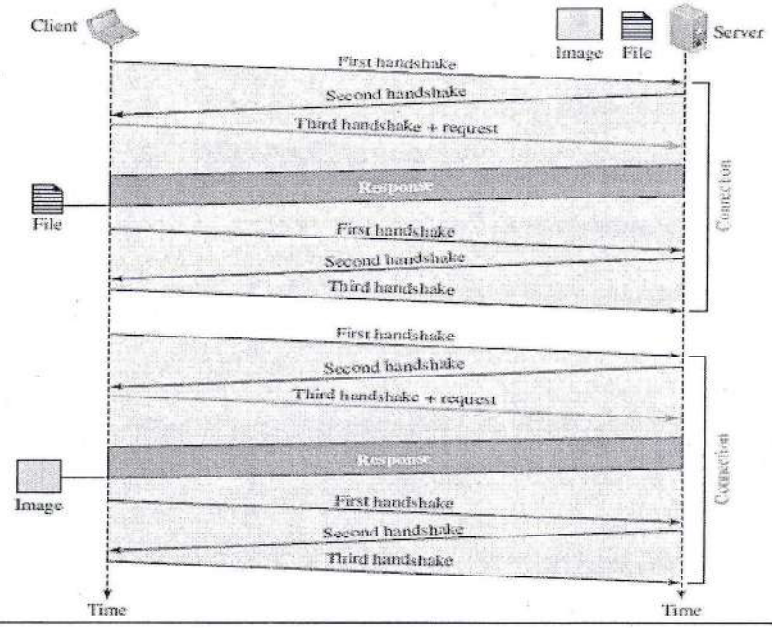
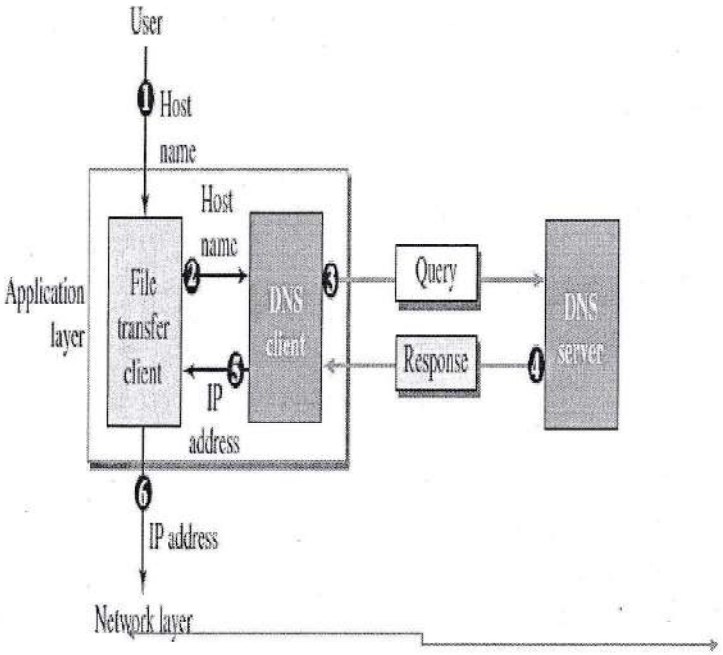
Degree	:	**B.E**	**Semester**	:	**VII A & B**
Branch	:	**E&CE**	**Date**	:	**22-12-2022**
Course Title	:	**Computer Networks**	**Course Code**	:	**18EC71**
Duration	:	**90 Minutes**	**Max Marks**	:	**30**

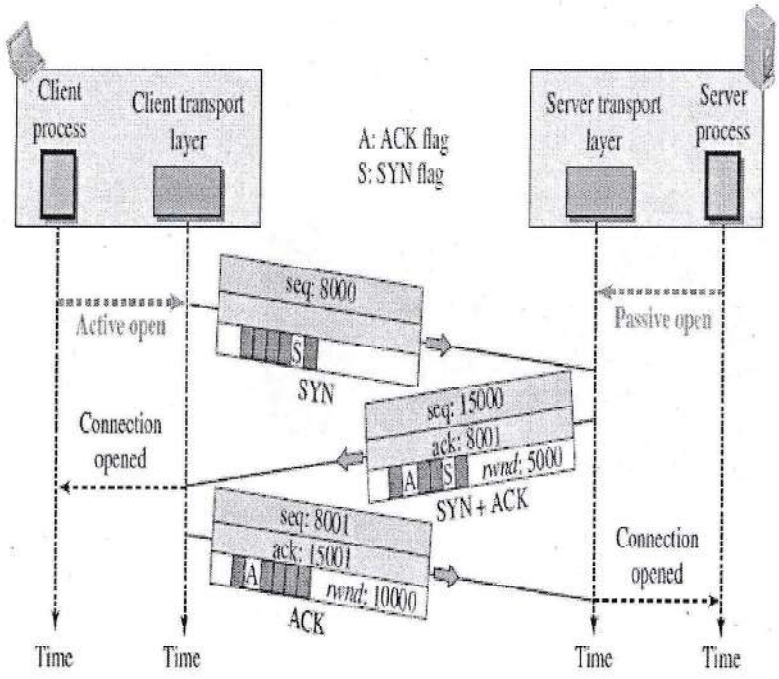
Note: Answer ONE full question from each part

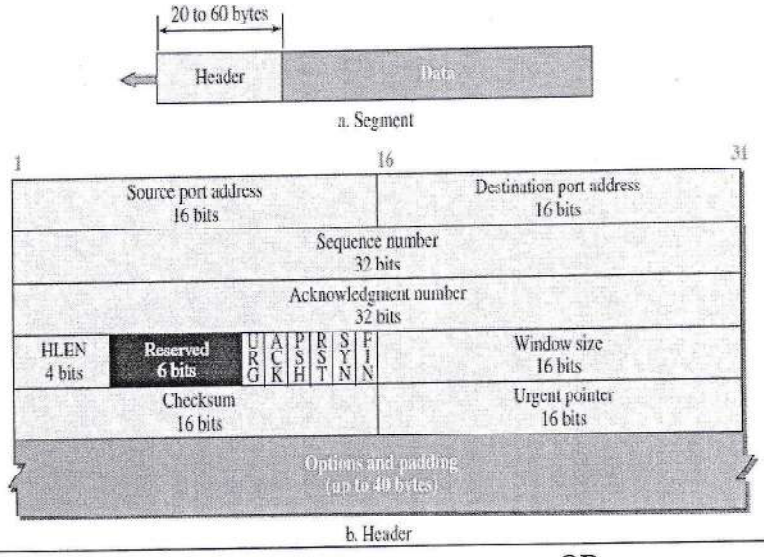
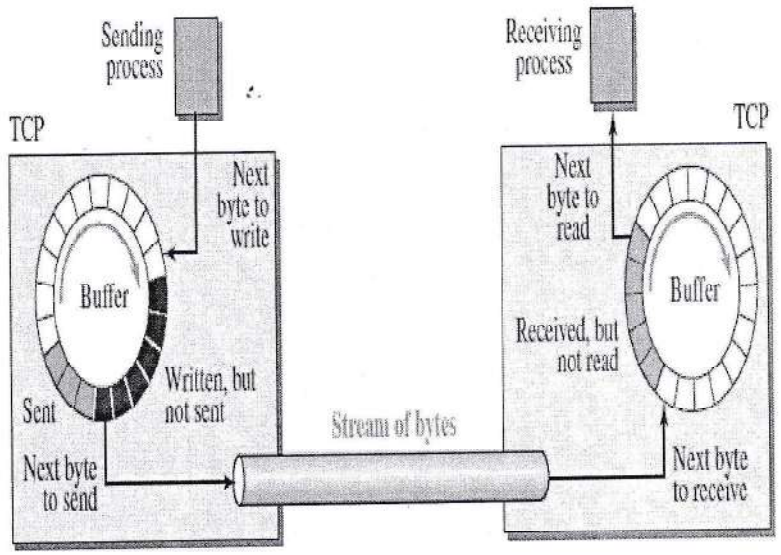
K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Q. No.	Scheme and Solution	Marks	K Level	CO
	PART-A			
1(a)	Figure 26.12 *Common scenario* 	**6M** **Dia- 3M** **Exp- 3M**	**K3**	**CO5**
1(b)	Data connection: FTPcantransferoneofthefollowingfiletypesacrossthedata connection:ASCIIfile,EBCDICfile,orimage file. • **DataStructures:**filestructure,recordstructure,orpagestructure. • **TransmissionMode:**streammode,blockmode,orcompressedmode. Streammode:defaultmode;dataaredeliveredfromFTPtoTCPasacontinuousstreamofbytes. Blockmode:datacanbedeliveredfromFTPtoTCPinblocks.Inthiscase,eachblockispreceded bya3-byteheader.Thefirstbyteiscalledtheblock descriptor;the nexttwobytesdefinethesizeoftheblockin bytes.	**6M** **Sol-6M**	**K4**	**CO5**

1(c)	Figure 26.2 *Browser* 	6 M Dia- 3M Exp- 3M	K3	CO5
	OR			
2(a)		6M Dia- 3M Exp- 3M	K3	CO5

2(b)	Figure 26.3 *Example 26.3* 	6M Dia- 4M Exp- 2M	K4	CO5
2(c)	Figure 26.28 *Purpose of DNS* 	6M Sol-6M	K3	CO5

	PART-B			
3(a)	Solution a. The source port number is the first four hexadecimal digits $(CB84)_{16}$, which means that the source port number is 52100. b. The destination port number is the second four hexadecimal digits $(000D)_{16}$, which means that the destination port number is 13. c. The third four hexadecimal digits $(001C)_{16}$ define the length of the whole UDP packet as 28 bytes. d. The length of the data is the length of the whole packet minus the length of the header, or 28 – 8 = 20 bytes. e. Since the destination port number is 13 (well-known port), the packet is from the client to the server. f. The client process is the Daytime (see Table 24.1).	6M Sol-6M	K4	CO4
3b	Figure 24.10 *Connection establishment using three-way handshaking* 	6M Dia- 4M Exp- 2M	K4	CO4

4a	Figure 24.7 *TCP segment format*  	6M Dia-3M Exp-3M	K4	CO4
	OR			
4(b)	Figure 24.5 *Sending and receiving buffers*  	6M Dia-3M Exp-3M	K4	CO4

Course In charge

Module coordinator

HODECE

K S INSTITUTE OF TECHNOLOGY

Bangalore – 560109

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGG.

CIE Question paper Scrutiny format

Course Name	Computer Networks
Course Code	18ECT1
Course Incharge	Dr. Dinesh Kumar D.S
Academic year	2022-23 (ODD)
Semester	7th A & B
CIE #	3
Set	A ☑ B ☐
Scrutiny parameters	
Whether questions are according to assessment plan?	Yes ☑ No ☐ ; If No, Suggestions:
Whether questions prepared are within the covered syllabus?	Yes ☑ No ☐ ; If No, Suggestions:
Whether all questions are mapped to CO/PO properly?	Yes ☑ No ☐ ; If No, Suggestions:
Whether questions framed are according to Blooms level?	Yes ☑ No ☐ ; If No, Suggestions:
Whether marks distribution for each question is correct?	Yes ☑ No ☐ ; If No, Suggestions:
Whether questions paper follows the format displayed?	Yes ☑ No ☐ ; If No, Suggestions:
Difficulty level	Very High ☐ High ☑ Moderate ☐ Low ☐
Percentage of Similarity questions in Set A & B	20 %
Final decision	Accepted without corrections ☐ Accepted with minor corrections ☐ Not accepted ☐

Dinesh 15/12/22

Signature with date
of CIE Question paper setter

Name and Signature with date
of CIE Question paper Scrutiniser

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
THIRD INTERNAL TEST QUESTION PAPER 2022-23ODD SEMESTER

SET: B

USN										

Degree : B.E.
Branch : E&CE
Course Title : Computer Networks
Duration : 90 Minutes

Semester : VII
Course Code : 18EC71
Date : 22/12/2022
Max Marks : 30

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Crcating

Note: Answer ONE full question from each part.

Q No.	Question	Marks	CO mapping	K-Level
	Part-A			
1(a)	Make use of different documents used in WWW	6	CO5	K3
(b)	Analyze request and response message formats used in HTTP	6	CO5	K4
(c)	Identify commands and responses used in SMTP	6	CO5	K3
2(a)	Make use of control connection with some common commands and responses used in FTP	6	CO5	K3
(b)	Analyze i. Persistent ii. non persistent connections of HTTP with relevant diagrams	6	CO5	K4
(c)	Make use of DNS message format used in internet with relevant diagram	6	CO5	K3
	Part-B			
3(a)	Analyze UDP datagram format with relevant fields	6	CO4	K4
(b)	Analyze different protocols used in the transport layer with relevant diagram	6	CO4	K4
4(a)	Analyze connection establishment and data transfer used in TCP with flow chart	6	CO4	K4
(b)	Solve i. Source port number ii. Destination port number iii.Length of the user datagram iv. length of data for the UDP header v.is the packet is from client to server or vice versa vi. What is the client process in the following hexadecimal format-CB84000D001C001C	6	CO4	K4

Name &Signature of Course In charge | Name &Signature of Module Coordinator | HOD ECE | Principal

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU-560109

Department of Electronics & Communication Engineering

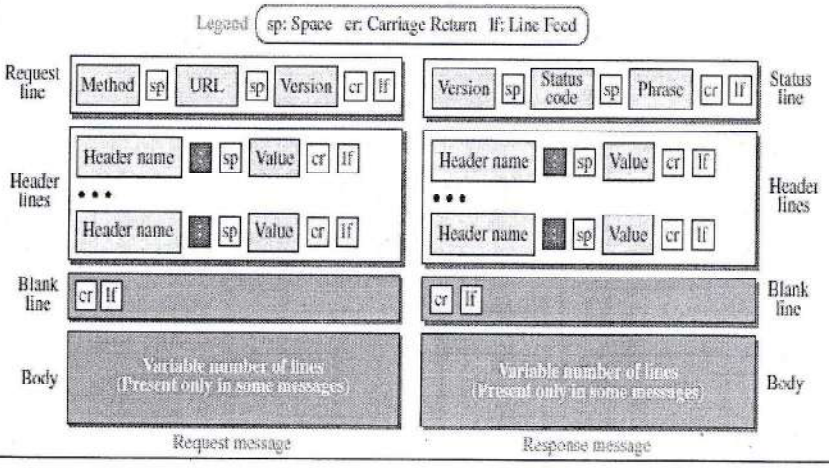
SESSION: 2022-2023 (ODD SEMESTER)

THIRD INTERNAL TEST SCHEME & SOLUTION-SET-B

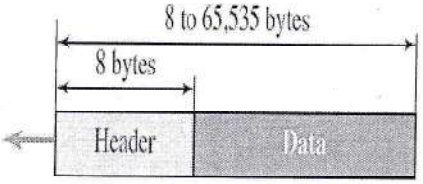
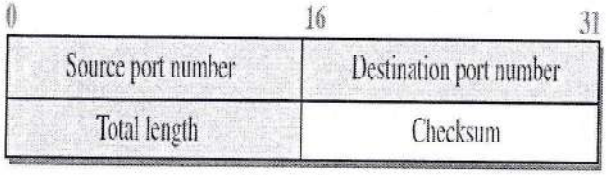
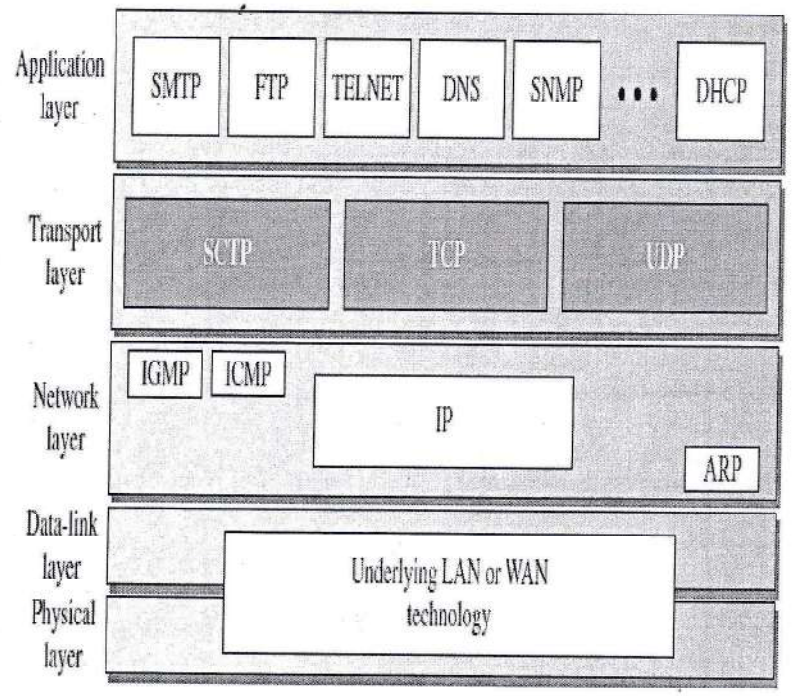
Degree	:	**B.E**	**Semester**	:	**VII A & B**
Branch	:	**E&CE**	**Date**	:	**22-12-2022**
Course Title	:	**Computer Networks**	**Course Code**	:	**18EC71**
Duration	:	**90 Minutes**	**Max Marks**	:	**30**

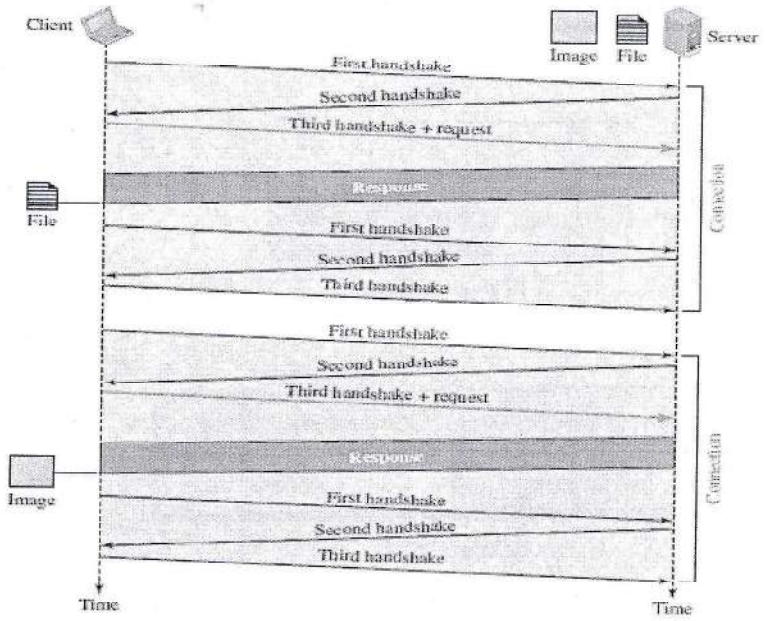
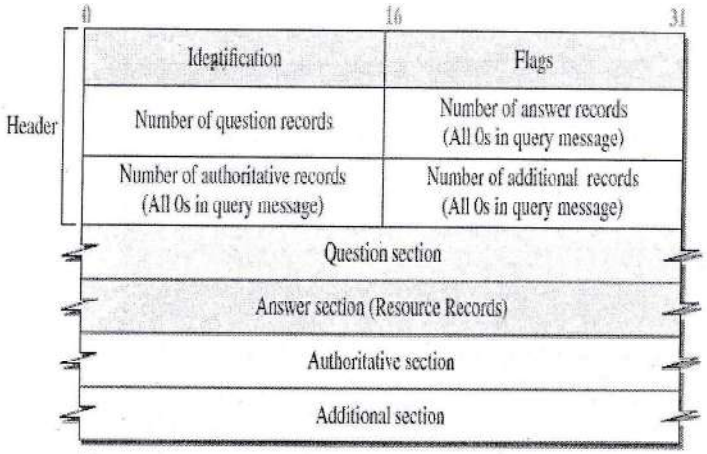
Note: Answer ONE full question from each part

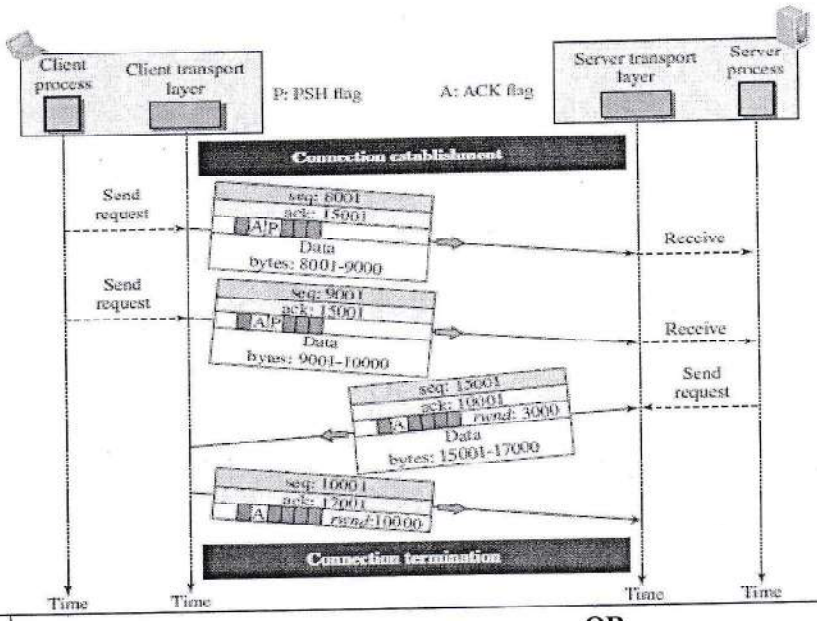
K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Q. No.	Scheme and Solution	Marks	K Level	CO
	PART-A			
1(a)	**WebDocuments:static,dynamic,andactive** **Static:**thecontentsofthefile aredeterminedwhen thefile iscreated,notwhen itisused. Staticdocumentsarepreparedusingoneofseverallanguages: **HyperTextMarkupLanguage(HTML)** **Dynamic:**Whenarequestarrives,thewebserverrunsanapplicationprogramorascript thatcreatesthedynamicdocument.Theserverreturnstheresultoftheprogramorscriptasaresponsctothebrowserthat requestedthedocument **ActiveDocuments:**Formanyapplications,weneedaprogramorascriptt oberunattheclientsite.Thesearecalledactivedocuments.	**6M** **Exp- 6M**	**K3**	**CO5**
1(b)	Figure 26.5 *Formats of the request and response messages* 	**6M** **Dia- 3M** **Exp- 3M**	**K4**	**CO5**

1(c)	Table 26.6 *SMTP commands* *Keyword* / *Argument(s)* / *Description* HELO — Sender's host name — Identifies itself MAIL FROM — Sender of the message — Identifies the sender of the message RCPT TO — Intended recipient — Identifies the recipient of the message DATA — Body of the mail — Sends the actual message QUIT — Terminates the message RSET — Aborts the current mail transaction VRFY — Name of recipient — Verifies the address of the recipient NOOP — Cheeks the status of the recipient TURN — Switches the sender and the recipient EXPN — Mailing list — Asks the recipient to expand the mailing list HELP — Command name — Asks the recipient to send information about the command sent as the argument SEND FROM — Intended recipient — Specifies that the mail be delivered only to the terminal of the recipient, and not to the mailbox SMOL FROM — Intended recipient — Specifies that the mail be delivered to the terminal *or* the mailbox of the recipient SMAL FROM — Intended recipient — Specifies that the mail be delivered to the terminal *and* the mailbox of the recipient	6 M Exp- 6M	K3	CO5
	OR			
2(a)	Table 26.5 *Some responses in FTP* *Code* / *Description* / *Code* / *Description* 125 — Data connection open — 250 — Request file action OK 150 — File status OK — 331 — User name OK; password is needed 200 — Command OK — 425 — Cannot open data connection 220 — Service ready — 450 — File action not taken; file not available 221 — Service closing — 452 — Action aborted; insufficient storage 225 — Data connection open — 500 — Syntax error; unrecognized command 226 — Closing data connection — 501 — Syntax error in parameters or arguments 230 — User login OK — 530 — User not logged in	6M Exp- 6M	K3	CO5

3(a)	Figure 24.2 *User datagram packet format*  a. UDP user datagram  b. Header format	**6M** **Dia- 3M** **Exp- 3M**	**K4**	**CO4**
3b	Figure 24.1 *Position of transport-layer protocols in the TCP/IP protocol suite*  	**6M** **Dia- 3M** **Exp- 3M**	**K4**	**CO4**

2(b)	Figure 26.3 *Example 26.3* 	6M Dia- 4M Exp- 2M	K4	CO5
2(c)	Figure 26.38 *DNS message*  Note: The query message contains only the question section. The response message includes the question section, the answer section, and possibly two other sections.	6M Dia- 3M Exp- 3M	K3	CO5
	PART-B			

4a	Figure 24.11 *Data transfer* 	6M Dia-3M Exp-3M	K4	CO4
	OR			
4(b)	**Solution** a. The source port number is the first four hexadecimal digits $(CB84)_{16}$, which means that the source port number is 52100. b. The destination port number is the second four hexadecimal digits $(000D)_{16}$, which means that the destination port number is 13. c. The third four hexadecimal digits $(001C)_{16}$ define the length of the whole UDP packet as 28 bytes. d. The length of the data is the length of the whole packet minus the length of the header, or 28 – 8 = 20 bytes. e. Since the destination port number is 13 (well-known port), the packet is from the client to the server. f. The client process is the Daytime (see Table 24.1).	6M Sol-6M	K4	CO4

Course In charge

Module coordinator

HOD ECE

K S INSTITUTE OF TECHNOLOGY

Bangalore – 560109

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGG.

CIE Question paper Scrutiny format

Course Name	Computer Networks
Course Code	18EC71
Course Incharge	Dr. Dinesh Kumar D.S
Academic year	2022-23 (ODD)
Semester	7th A & B
CIE #	3
Set	A☐ B☑
Scrutiny parameters	
Whether questions are according to assessment plan?	Yes ☑ No☐ ; If No, Suggestions:
Whether questions prepared are within the covered syllabus?	Yes ☑ No ☐ ; If No, Suggestions:
Whether all questions are mapped to CO/PO properly?	Yes ☑ No ☐ ; If No, Suggestions:
Whether questions framed are according to Blooms level?	Yes ☑ No ☐ ; If No, Suggestions:
Whether marks distribution for each question is correct?	Yes ☑ No ☐ ; If No, Suggestions:
Whether questions paper follows the format displayed?	Yes ☑ No ☐ ; If No, Suggestions:
Difficulty level	Very High ☐ High ☑ Moderate ☐ Low☐
Percentage of Similarity questions in Set A & B	20%
Final decision	Accepted without corrections☐ Accepted with minor corrections☐ Not accepted☐

Dinesh 15/12/22

Signature with date
of CIE Question paper setter

Name and Signature with date
of CIE Question paper Scrutiniser

K. S. INSTITUTE OF TECHNOLOGY

#14, Raghuvanahalli, Kanakapura Main Road, Bengaluru-5600109

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

2022-23ODD SEMESTER

List of students who are identified as slow learners and their marks in every internal

Subject and Subject Code: Computer Networks - 18EC71

Semester and Section: VII/A&B

Sl No.	USN	NAME	First Test Marks (30)	Remedial Class Dates & Attendance		Improvement Test Marks (30)	Second Test Marks (30)	Remedial Class Dates & Attendance		Improvement Test Marks (30)	Third Test Marks (30)	Improvement Test Marks (30)	FINAL (30)
				2/11/22	9/11/22			5/12/22	10/12/22				
01	1KS19EC002	ABHISHEK CHANDRESH	16	Y	Y	10	AB	Y	Y	5	14	-	14
02	1KS19EC019	CHIRANTHANA YOGANANDA K	17	Y	Y	-	AB	Y	Y	13	24	-	17
03	1KS19EC023	DHANYA SUKANTH B K	AB	Y	Y	16	AB	Y	Y	-	25	-	14
04	1KS19EC029	GONUGUNTLA SAI SIDDARTHA	AB	Y	Y	11	AB	Y	Y	6	16	-	11
05	1KS19EC052	MOHAMMED RAKEEB M R	AB	Y	Y	23	6	Y	Y	-	17	-	16
06	1KS19EC058	PRADEEP GADED	12	Y	Y	AB	6	Y	Y	-	14	-	11
07	1KS19EC061	PRASHANTH S K	AB	Y	Y	14	AB	Y	Y	-	24	-	13
08	1KS19EC063	PREETHAM GH	AB	Y	Y	22	AB	Y	Y	-	29	-	17
09	1KS19EC067	SAMEEKSHA S	10	Y	Y	-	AB	Y	Y	15	18	-	15
10	1KS19EC087	SRINIVAS .S	12	Y	Y	-	AB	Y	Y	-	27	-	18

K. S. INSTITUTE OF TECHNOLOGY

#14, Raghuvanahalli, Kanakapura Main Road, Bengaluru-5600109

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

2022-23ODD SEMESTER

List of students who are identified as slow learners and their marks in every internal

Subject and Subject Code: Computer Networks - 18EC71

Semester and Section: VII/A&B

Sl No.	USN	NAME	First Test Marks (30)	Remedial Class Dates & Attendance		Improvement Test Marks (30)	Second Test Marks (30)	Remedial Class Dates & Attendance		Improvement Test Marks (30)	Third Test Marks (30)	Improvement Test Marks (30)	FINAL (30)
				2/11/22	9/11/22			5/12/22	10/12/22				
01	1KS19EC002	ABHISHEK CHANDRESH	16	Y	Y	10	AB	Y	Y	5	14	-	14
02	1KS19EC019	CHIRANTHANA YOGANANDA K	17	Y	Y	-	AB	Y	Y	13	24	-	17
03	1KS19EC023	DHANYA SUKANTH B K	AB	Y	Y	16	AB	Y	Y	-	25	-	14
04	1KS19EC029	GONUGUNTLA SAI SIDDARTHA	AB	Y	Y	11	AB	Y	Y	6	16	-	11
05	1KS19EC052	MOHAMMED RAKEEB M R	AB	Y	Y	23	6	Y	Y	-	17	-	16
06	1KS19EC058	PRADEEP GADED	12	Y	Y	AB	6	Y	Y	-	14	-	11
07	1KS19EC061	PRASHANTH S K	AB	Y	Y	14	AB	Y	Y	-	24	-	13
08	1KS19EC063	PREETHAM GH	AB	Y	Y	22	AB	Y	Y	-	29	-	17
09	1KS19EC067	SAMEEKSHA S	10	Y	Y	-	AB	Y	Y	15	18	-	15
10	1KS19EC087	SRINIVAS .S	12	Y	Y	-	AB	Y	Y	-	27	-	18

11	1KS19EC104	VIKAS S	AB	Y	Y	16	AB	Y	Y	-	21	-	13
12	1KS19EC0105	VINUTH S REDDY	AB	Y	Y	12	5	Y	Y	-	19	-	12
13	1KS20EC0400	MADALA VIVEK KUMAR	12	Y	Y	-	AB	Y	Y	-	25	-	13

Signature of the Faculty

Signature of the HOD

HEAD OF THE DEPARTMENT
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NSTITUTE OF TECHNOLOGY, BANGALORE - 560109

DEARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

TEACHING AND LEARNING

PEDAGOGY REPORT

Academic Year	2022-23 (Even)
Name of the Faculty	Dr.Dinesh Kumar D S
Course Name /Code	Computer Networks/18EC71
Semester/Section	VII/A &B
Activity Name	Literature survey Paper
Topic Covered	Computer NetworksSyllabus
Date	9/12/2022 to 25/12/2022
No. of Participants	105
Objectives/Goals	• To improve the self-learning skills ofstudents • To improve the communication skills ofstudents. • To improve the writing skills of journal paper
ICT Used	-
Appropriate Method/Instructional materials/Exam Questions • Journals / Conference papers referred	
Relevant PO's	1,2,5,9,10,12
Significance of Results/Outcomes	• This will teach & enhance working in team along with writing communication skills. • Students wrote individual paper and also a merged together paper after analyzing with other papers written by their groupmates.
Reflective Critique	• The activity improved the learningand communication skills ofstudents • The activity provided a platform for students to interact with peers, improve their communication skills and work as individuals. • The activity also helped them to write journal literature paper which will be required in future in research work.

Signature of CourseIncharge

Signature of HOD ECE

BATCH NO	USN	NAME	TITLE -SURVEY PAPER
1	1KS19EC025	Disha Shivani	Wireless network Protocols
	1KS19EC008	Amulya R	
	1KS19EC012	Ashritha R	
	1KS19EC027	Gayathri P K	
2	1KS19EC032	Harshitha B Y	TCP/IP protocol layering
	1KS19EC014	Bhavana S	
	1KS19EC009	Anitha S	
	1KS19EC052	Nidhi	
3	1KS19EC071	Sabarish I J	Application Layer Protocols
	1KS19EC076	Santosh Hegde	
	1KS19EC077	Sathvik U.M	
	1KS19EC096	T N L Ruthvik	
	1KS19EC090	Suhas M Gowda	
4	1KS19EC095	Swathi U	Network layer and Transport Layer Protocols
	1KS19EC102	Vandana S	
	1KS20EC401	Ranjana P	
	1KS20EC402	Sindhu J	
5	1KS19EC003	Aishwarya Basvaraja Ke	Wired and Wireless LAN
	1KS19EC006	Akshitha	
	1KS19EC010	Anjali Y J	
	1KS19EC044	Lokeshwari M	
6	1KS19EC004	Aishwarya M G	Connection and Connectionless protocol
	1KS19EC011	Archana Yadav M	
	1KS19EC046	Meghana H P	
	1KS19EC057	Pooja S P	
7	1KS19EC039	KASHYAP P	TELNET
	1KS19EC048	MOHITH KUMAR G	
	1KS19EC050	MONISHA B K	
	1KS19EC051	N ANILA	
8	1KS19EC054	NITHIN D	STOP AND WAIT PROTOCOL
	1KS19EC055	PAVAN KUMAR G R	
	1KS19EC062	PRAVEEN KUMAR N	
	1KS19EC063	PREETHAM G H	
9	1KS19EC088	SRINIVASAN M	Network layer protocols
	1KS19EC100	VAISHNAVI K	
10	1KS19EC068	Rangaswamy U	HTTP and HTTP Video Streaming
	1KS19EC070	S K Bharatesh	
	1KS19EC082	Shreyas B Aradhya	
	1KS19EC094	Swagath Aithal P G	
	1KS19EC099	Tushar R Vasishta	
11	1KS19EC056	Pokuri Mounika	World Wide Web
	1KS19EC061	Prashant SK	
	1KS19EC065	Radhakrishna L	
	1KS19EC066	Rajalakshmi S	

World Wide Web

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Abstract- This paper gives an overview of the history, the current state, and possible future directions for the World Wide Web. The Web is simply defined as the universe of global network-accessible information. It is an abstract space with which people can interact, and is currently chiefly populated by interlinked pages of text, images and animations, with occasional sounds, three dimensional worlds, and videos. The World Wide Web was designed originally as an interactive world of shared information through which people could communicate with each other and with machines. Since its inception in 1989 it has grown initially as a medium for the broadcast of read-only material from heavily loaded corporate servers to the mass of Internet connected consumers.

Keywords- Network-accessible, interact, three-dimensional, broadcast.

INTRODUCTION

World Wide Web (WWW), byname the Web, the leading information retrieval service of the Internet (the worldwide computer network). The Web gives users access to a vast array of documents that are connected to each other by means of hypertext or hypermedia links—i.e., hyperlinks, electronic connections that link related pieces of information in order to allow a user easy access to them. Hypertext allows the user to select a word or phrase from text and thereby access other documents that contain additional information pertaining to that word or phrase. Hypermedia documents feature links to images, sounds, animations, and movies. The Web operates within the Internet's basic client-server format; servers are computer programs that store and transmit documents to other computers on the network when asked to, while clients are programs that request documents from a server as the user asks for them. Browser software allows users to view the retrieved documents.

Working of WWW:

The World Wide Web is based on several different technologies: Web browsers, Hypertext Markup Language (HTML) and Hypertext Transfer Protocol (HTTP).

A Web browser is used to access web pages. Web browsers can be defined as programs which display text, data, pictures, animation and video on the Internet. Hyperlinked resources on the World Wide Web can be accessed using software interfaces provided by Web browsers. Initially, Web browsers were used only for surfing the Web but now they have become more universal. Web browsers can be used for several tasks including conducting searches, mailing, transferring files, and much more. Some of the commonly used browsers are Internet Explorer, Opera Mini, and Google Chrome.

LITERATURE SURVEY

[1] This paper attempts to characterize World Wide Web traffic patterns. First, the Web's HyperText Transfer Protocol (HTTP) is reviewed, with particular attention to latency factors. User access patterns and file size

distribution are then described. Next, the HTTP design issues are discussed, followed by a section on proposed revisions. Benefits and drawbacks to each of the proposals are covered. The paper ends with pointers toward more information on this area.

[2] A construction method of knowledge transfer from World Wide Web based on knowledge blogs was proposed to disseminate knowledge from appropriate knowledge sender to knowledge receiver. First, a model has been developed for knowledge dissemination in knowledge blogs from the knowledge reservoir of World Wide Web. This model is used to find out the frequently accessed blog in World Wide Web by the users. Second, an algorithm of KRR (Knowledge Request-Response) has been proposed to find out the appropriate transferred knowledge.

[3] Twenty million people now use the Internet, and the number of World Wide Web sites is well over one million and growing rapidly. Web sites are available all over the world, although most are located in the United States. Importantly, the Web's design is consistent with many of our information gathering instincts. It encourages browsing and experimentation and allows each person at computer sites around the world to design unique ways to present and use information. The author discusses its practical applications, explains how hypertext works, and discusses how it is can be used by power utilities. Reserving a password and gaining access to the World Wide Web are also discussed.

[4] The design principle of publishing program source code document on-line is presented. In this design, Knuth's literate programming is employed as the foundation of the publishing method. The concepts similar to World Wide Web are adapted to our publishing method utilizing the extended markup language design. Concrete syntax of the markup language and some discussions on the document delivery of the methodology are also presented. Finally, notes on the implementation are given, as closing remarks.

[5] The objective of this project is to create a compilation of educational resources in remote sensing accessible through the World-Wide Web (WWW). This compilation will be useful to anyone interested in learning about remote sensing. Educators might also find it useful as a place to locate useful resources for teaching courses in remote sensing. The remote sensing web resources were organized into several categories in the authors' web pages.The authors hope to provide a one-stop web page for accessing educational resources in remote sensing on the World Wide Web.

[6] The goal of implementing a DSM information service system on the World Wide Web (WebDISS) is to provide information service and decision-making support services for Government officers, customers, energy engineers and technicians. By providing these services, electric utilities try to find an easy-to-access way for everyone to understand DSM and adopt DSM programs to improve the end-use energy efficiency, thereby contributing to the successful application of DSM in China. From the authors' experiences, WebDISS is total solution to achieve DSM.

[7] Multimedia applications within the World Wide Web (WWW) have to deal with difficulties like executing within Web pages and being transferred via the Internet. However, the temporal aspects of hypermedia features for continuous media like audio and video resemble all other kinds of multimedia applications. These temporal aspects are discussed in consideration of presentation and authoring facilities. A system architecture and implementation relying on commercial WWW technology is presented.

[8] The World Wide Web can be used a powerful and convenient means of disseminating computer aided education because most students already have access to the Web and the necessary Web browsers such as Netscape. There are many benefits in this approach because students already tend to do significant amounts of Internet surfing and are familiar with the usage of Web sites and browsers. Therefore online instruction for their coursework using this all pervasive computer network which may be accessed from almost anywhere is a powerful and beneficial low cost alternative to other forms of computer aided learning. The key aims of this package development are to provide a compact and self contained package of instruction in the features and facilities provided by the C programming language together with an introduction to the Unix programming environment with its vast range of utilities and command interpreter shells. Part of this introduction to Unix is provided in the Bourne Shell as a programming language instruction module.

CONCLUSION

The WWW began with only one use but with enormous potential and a collective dream, not yet fully realized, of its creators. The WWW and the internet have many problems and can have negative consequences in society. However, it also has many positives, especially its impact on communication globally and locally.

The World wide web is an interconnected system of public web pages accessible through the Internet.The world wide web follows the client-server model.The world wide web provides features like HyperText Information System, Cross-Platform, Distributed, open standards, open-source, etc.

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#14, Raghuvanahalli, Kanakapura Main Road, Bengaluru-560109

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Course: Computer Networks	Course Code:18EC71	Type: Core
Course In Charge: Dr. Dinesh Kumar D S	Academic year:2022-23	

Question bank for Module – 1

1. Describe significant services of all layers in TCP/IP protocol suite along with the encapsulation and decapsulation processes with necessary figures
2. List different performance criteria of a network.
3. Explain different physical structures and network topologies with the help of diagrams.
4. Distinguish TCP/IP Model with OSI Model
5. Show the encapsulation and decapsulation representation in the TCP/IP model and explain.
6. Define framing. Explain role of bit stuffing in a framing.
7. Mention different network topologies. List out advantages and disadvantages of each topology.
8. What are the five components involved in data communication? Explain with a suitable diagram.
9. Explain the significance of layers in TCP/IP protocol suite with neat diagram.
10. With a neat diagram, explain the responsibilities of each layer in TCP/IP protocol suite.

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#14, Raghuvanahalli, Kanakapura Main Road, Bengaluru-560109

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Course: Computer Networks	Course Code:18EC71	Type: Core
Course In Charge: Dr. Dinesh Kumar D S	Academic year:2022-23	

Question bank for Module – 2

1. Describe various fields in the format of an ARP packet and analyze how ARP sends request and response message with suitable example
2. Write short notes on Implementation of standard Ethernet Topologies
3. Describe the concept of bit stuffing and byte stuffing in framing.
4. Explain CSMA/CD working with the help of flowchart.
5. List the characteristics of Wireless LANs-4M An ALOHA network transmits 200 bit frame using a shared channel with a 200kbps band width. Find the throughput of pure and slotted ALOHA if the system produces 500 frame per second.
6. Describe the frame format of IEEE 802.3 Ethernet. What are minimum and maximum length of frame?
7. Identify unicast, multicast and broadcast from the following MAC addresses:

i) 4A : 30 : 10 : 21 : 10 : 1A

ii) 47 : 20 : 1B : 2E : 08 : EE

iii) EE : FF : 10 : 01 : 11 : 00

iv)FF : FF : FF : FF : FF : FF .

8. A network using CSMA/CD has a band width of 10Mbps. If the maximum propagation time is 25.6μs. What is the minimum size of the frame?
9. In the standard Ethernet with the transmission rate of 10Mbps. Length of cable is 2500mt and frame size is 512 bits. The propagation speed in a cable is $2x10^8$ m/s. Find efficiency of standard Ethernet.
10. Explain the behavior of CSMA protocol with a neat diagram and show the vulnerable time in CSMA.
11. A pure ALOHA network transmits 200 bit frames on a shared channel of 200kbps. What is throughput if the system (all stations together) produces?

i) 1000 frames per second?

ii) 500 frames per second?

iii) 250 frames per second?

12. Explain the three strategies used in CSMA/CA collision avoidance.
13. With a neat diagram explain Ethernet frame format.
14. Describe persistence methods in CSMA with flow diagram.
15. Explain stop and wait protocol and show how adding sequence numbers can prevent duplicates with the help of flow diagram.
16. Demonstrate stop and wait protocol by considering acknowledgement, timer and sequence no with the help of flow diagram.
17. Describe link layer addressing with suitable illustration.
18. Describe the operation of STOP and WAIT protocol also FSM for STOP and WAIT protocol.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

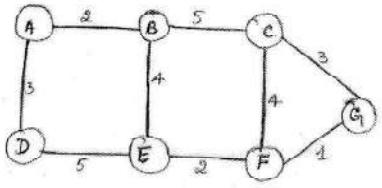
Course: Computer Networks	**Course Code:18EC71**	**Type: Core**
Course In Charge: Dr. Dinesh Kumar D S	**Academic year:2022-23**	

Question bank for Module – 3

1. Explain working of DHCP Protocol.
2. Inspect the following MAC addresses to categorize them as unicast, multicast and broadcast:

i) 4A : 30 : 10 : 21 : 10 : 1A
ii) 47 : 20 : 1B : 2E : 08 : EE
iii) EF : FF : 10 : 01 : 11 : 00
iv) FF : FF : FF : FF : FF : FF

3. Explain IPV4 Datagram format with a neat diagram
4. Explain a simple implementation of Network Address Translation (NAT) and address translation with a neat diagram.
5. Explain the occupation of the address space in classful addressing.
6. A block of addresses is granted to a small organization. We know that one of the addresses is 167.199.170.82/27 . What is the first address, last address and total number of address of the block?
7. Differentiate between datagram network and virtual circuit network.
8. An organization is granted a block of address with the beginning addresses 14.24.74.0.24 . The organization need to have 3 sub blocks of addresses to use in its three subnets: one sub block of 10 addresses, one sub block of 60 addresses, and one sub block of 120 addresses. Design the sub blocks.
9. Examine distance-vector-routing using a Bellman Ford algorithm providing a suitable illustration.
10. Describe Spanning Tree Algorithm with an example.
11. Explain with an example distance vector routing algorithm.
12. Explain with an example link state routing and also apply Dijkstra algorithm to find least cost path tree.
13. Find the shortest path from source 'A' to destination 'G' from given graph as shown in the Fig. using the Dijkstra algorithm.



14. Explain distance-vector-routing using a Bellman Ford algorithm providing a suitable illustration.
15. With relevant diagrams describe Distance Vector Routing. What is two node instability in DVR?
16. Explain operation of Border Gateway Protocol (BGP) with a diagram.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Course: Computer Networks	Course Code:18EC71	Type: Core
Course In Charge: Dr. Dinesh Kumar D S	Academic year:2022-23	

Question bank for Module – 4

1. Describe connectionless and connection-oriented services provided by the transport layer.
2. Discuss the general services provided by UDP.
3. Explain working of Go-back-N Protocol.
4. Describe sending and receiving buffers in TCP
5. Explain IPV4 Datagram format with a neat diagram.
6. Explain why the send window size for Go-Back N must be less than 2^m.
7. With a neat diagram explain TCP segment format.
8. Explain why the size of the send and receive window in selective repeat can be atmost one half of 2_m.
9. Explain with a neat diagram connection establishment using three-way handshaking in TCP.
10. Discuss TCP segment.
11. Demonstrate Go-back-n protocol with a forward channel is reliable but in the reverse channel, if an acknowledgement is delayed or lost.
12. Explain TCP connection establishment and connection termination using three way handshaking.
13. Describe slow start algorithm for handling congestion in TCP.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Course: Computer Networks	**Course Code:18EC71**	**Type: Core**
Course In Charge: Dr. Dinesh Kumar D S	**Academic year:2022-23**	

Question bank for Module – 5

1. Contrast the Persistent and non-persistent connections in HTTP.
2. Explain the architecture and format of Electronic Mail
3. Contrast Local and Remote Logging in TELNET
4. List the features of DNS Recursive and Iterative Resolutions.
5. Contrast the request and response message formats in HTTP
6. Explain the Simple Mail Transfer Protocol Operation
7. Analyze the concept of Web based Email with respect to general Email
8. Explain the concept of FTP in detail.
9. Analyse the concept MIME and associated datatypes.

CBCS SCHEME

USN | | | | | | | | | | |

18EC71

Seventh Semester B.E. Degree Examination, Feb./Mar. 2022
Computer Networks

Time: 3 hrs. Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Describe significant services of all layers in TCP/IP protocol suite along with the encapsulation and decapsulation processes with necessary figures. **(16 Marks)**

b. List different performance criteria of a network. **(04 Marks)**

OR

2 a. Explain different physical structures and networks topologies with the help of diagrams. **(16 Marks)**

b. Distinguish TCP/IP model with OSI model. **(04 Marks)**

Module-2

3 a. Describe various fields in the format of an ARP packet and explain how ARP sends request and response messages. **(12 Marks)**

b. Write short notes on implementation of standard Ethernet topologies. **(08 Marks)**

OR

4 a. Describe the concept of bit stuffing and byte stuffing. **(10 Marks)**

b. Explain CSMA/CD working with the help of flowchart. **(06 Marks)**

c. List the characteristics of wireless LANs. **(04 Marks)**

Module-3

5 a. Explain working of DHCP [Dynamic Host Configuration Protocol]. **(08 Marks)**

b. Inspect the following MAC addresses and categories them as unicast, multicast and broadcast. **(04 Marks)**

i) 4A : 30 : 10 : 21 : 10 : 1A
ii) 47 : 20 : 1B : 2E : 08 : EE
iii) EF : FF : 10 : 01 : 11 : 00
iv) FF : FF : FF : FF : FF: FF

c. Explain IPV4 datagram format with a neat diagram. **(08 Marks)**

OR

6 a. Explain a simple implementation of Networks Address Translation (NAT). **(10 Marks)**

b. Explain distance vector routing algorithm using Bellman ford equations. **(10 Marks)**

Module-4

7 a. Describe connectionless and connection – oriented services provided by the transport layer. **(14 Marks)**

b. Describe the general services provided by UDP. **(06 Marks)**

OR

8 a. Explain working of Go-back-N protocol. **(10 Marks)**

b. Describe sending and receiving buffers in TCP, and explain how segments are created form the bytes in the buffers. **(10 Marks)**

Module-5

9 a. Explain the architecture and format of electronic mail. **(10 Marks)**

b. Distinguish Local Logging and Remote Logging. **(10 Marks)**

OR

10 a. Explain persistent and non-persistent connections in HTTP. **(10 Marks)**

b. Write a short note on DNS recursive and iterative resolutions. **(10 Marks)**

CBCS SCHEME

USN 1KS20EC400

18EC71

Seventh Semester B.E. Degree Examination, Jan./Feb. 2023
Computer Networks

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 a. What is Physical Topology? With a neat diagram, explain the various types of physical topologies available in computer networks. **(10 Marks)**

b. With a neat diagram, explain the significance of layers in TCP/IP protocol suite. **(10 Marks)**

OR

2 a. Explain LAN and WAN with the help of neat diagrams. **(06 Marks)**

b. With a neat diagram, explain the five components of Data Communication. **(06 Marks)**

c. Explain encapsulation and decapsulation in TCP/IP model with the help of a neat diagram. **(08 Marks)**

Module-2

3 a. What is an ARP? Explain the operation of ARP and its packet format with suitable diagrams. **(10 Marks)**

b. Explain stop and wait protocol with a neat FSM diagram. Also explain how sequence and acknowledge numbers prevent duplication of frames with necessary diagrams. **(10 Marks)**

OR

4 a. A slotted ALOHA network transmits 200 bit frames using a shared channel with a 200 kbps bandwidth. Find the throughput if the system produces
(i) 1000 frames per second (ii) 500 frames per second (iii) 250 frames per second? **(06 Marks)**

b. Explain CSMA/CA protocol with a flow diagram. **(08 Marks)**

c. Explain the Ethernet Frame format of standard Ethernet. **(06 Marks)**

Module-3

5 a. Explain with a neat diagram, the virtual circuit packet switched network and its various phases of operation. **(10 Marks)**

b. With a neat diagram explain IPv4 Datagram format. **(10 Marks)**

OR

6 a. Explain with an example, the Distance Vector Routing algorithm. **(10 Marks)**

b. Explain with an example, Link State Routing and also apply Dijkstra algorithm to find least cost path tree. **(10 Marks)**

Module-4

7 a. Explain connectionless and connection oriented protocols in transport layer. **(10 Marks)**

b. With a neat diagram, explain state transition diagram of TCP. **(10 Marks)**

OR

8 a. Explain Go-Back-N protocol along with sliding window diagrams. (10 Marks)
b. Explain TCP connection establishment using three way hand shaking. (10 Marks)

Module-5

9 a. Explain World Wide Web and Web documents with necessary diagrams. (10 Marks)
b. Explain the Architecture of Electronic mail with a neat diagram. (10 Marks)

OR

10 a. Explain with an example, the working of Hyper Text Transfer Protocol. (10 Marks)
b. What is Name-address resolution? With a neat diagram, explain the various types of resolution that are available. (10 Marks)

* * * * *

K.S.Institute of Technology,Bangalore -109
Department of Electronics and Communication Engg
7th sem Course End Survey 2022-23

Course : Computer Networks **Course Code :18EC71**

Q1.How well are you able to examine the layering architecture of computer networks and distinguish between the OSI reference model and TCP/IP protocol suite?

Q2.To what extent are you able to evaluate the protocols and services of Data link layer and Media access control?

Q3.What is your level of knowledge to analyse the packetizing, routing and forwarding services and associated protocols of Network layer?

Q4. How efficient are you in analyzing the protocols and functions associated with the transport layer services?

Q5.How efficient are you in analyzing the protocols and functions associated with the Application layer?

Date	USN	Name of the Student	Faculty Name	Q1	Q2	Q3	Q4	Q5
01-01-23	1KS19EC025	Disha Shivani	Dr. Dinesh Kumar D S	3	3	3	3	3
01-01-23	1KS19EC016	Chandan Raj Y	Dr. Dinesh Kumar D S	3	3	3	3	3
01-01-23	1KS19EC089	Sriram	Dr. Dinesh Kumar D S	3	3	3	3	3
01-01-23	1KS19EC075	Samiksha S	Dr. Dinesh Kumar D S	3	3	3	3	3
01-01-23	1KS19EC020	D Nayan	Dr. Dinesh Kumar D S	3	3	3	3	3
01-01-23	1KS19EC014	Bhavana S	Dr. Dinesh Kumar D S	3	3	3	2	3
02-01-23	1KS19EC086	Shubham Kumar Singh A	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1ks19ec077	Sathvik UM	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC027	Gayathri P K	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC094	Swagath Aithal PG	Dr. Dinesh Kumar D S	3	2	3	2	3
02-01-23	1ks19ec049	Monika V ARYA	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC002	Abhishek C	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC017	Chandana L	Dr. Dinesh Kumar D S	2	2	2	2	2
02-01-23	1KS19EC022	Davino Joseph	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1ks19ec071	Sabarish I J	Dr. Dinesh Kumar D S	2	2	2	2	2
02-01-23	1KS19EC069	Rohan K R	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC040	Krupa A	Dr. Dinesh Kumar D S	2	3	2	2	2
02-01-23	1ks19ec098	Theerthana S R	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC041	Kruthik s	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC066	Rajalakshmi S	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC062	Praveen Kumar.N	Dr. Dinesh Kumar D S	1	1	1	1	1
02-01-23	1KS19EC051	N.Anila	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC036	Jayanth MB	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS20EC402	Sindhu j	Dr. Dinesh Kumar D S	3	2	2	2	2
02-01-23	1KS19EC009	Anitha.S	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC102	Vandana S	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC103	Vignesh Muthaiah R	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC042	LAKSHMAN KUMARA .B	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC047	MOHAMMAD RAKHEEB M R	Dr. Dinesh Kumar D S	3	2	3	2	3
02-01-23	1KS19EC050	Monisha B K	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC100	Vaishnavi k	Dr. Dinesh Kumar D S	2	2	2	2	2
02-01-23	1KS19EC056	Pokuri Mounika	Dr. Dinesh Kumar D S	2	3	3	3	3

02-01-23	1KS19EC011	Archana Yadav M	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC084	Shreyas V Bharadwaj	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC101	Vandana.G	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC065	Radhakrishna L	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC008	Amulya R	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KA19EC076	SANTOSH HEGDE	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC012	Ashritha.R	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC052	Nidhi S	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC035	Jagruti pai	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC079	Shashank Kashyap HR	Dr. Dinesh Kumar D S	3	3	2	3	3
02-01-23	1KS19EC073	Sahana.S	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC030	Gowri S N	Dr. Dinesh Kumar D S	3	3	3	3	2
02-01-23	1KS19EC001	Abhilash A S	Dr. Dinesh Kumar D S	2	2	2	2	2
02-01-23	1KS19EC083	Shreyas Gowda	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC007	Amruta	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC028	Gayathri R Warrier	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC004	Aishwarya M G	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC078	Shamitha Bijoor	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC086	Sinchana mn	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC074	Sai Priya TS	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC067	Ramya sree.R	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC059	Prakash Chegore	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC048	Mohith Kumar G	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC010	Anjali Y J	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC082	Shreyas B Aradhya	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC093	Sushmitha S	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC046	Meghana H P	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC003	Aishwarya Basavaraja Kembavi	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC033	Hemanth R Patil	Dr. Dinesh Kumar D S	2	2	3	2	2
02-01-23	1KS19EC092	SUMUKHA VASISHTA MR	Dr. Dinesh Kumar D S	3	2	2	2	3
02-01-23	1KS19EC024	Dheemanth KN	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC064	Priyanka K	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC096	TNL RUTHVIK	Dr. Dinesh Kumar D S	3	2	3	2	3
02-01-23	1KS19EC006	Akshitha	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC068	RANGASWAMY U	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC087	Srinivas S	Dr. Dinesh Kumar D S	2	3	2	3	3
02-01-23	1KS19EC053	Nisarga k	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC108	Yashaswini N	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC081	Shreyams D.K	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS20EC400	MADALA VIVEK KUMAR	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1ks19ec097	Tejashwini pv	Dr. Dinesh Kumar D S	3	3	3	2	2
02-01-23	1KS19EC070	S K Bharatesh	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC095	SWATHI.U	Dr. Dinesh Kumar D S	2	2	2	3	3
02-01-23	1KS19EC105	VINUTH S REDDY	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC015	Chaitra P	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1ks20ec401	Ranjana p	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC088	Srinivasan M	Dr. Dinesh Kumar D S	3	3	3	3	3

02-01-23	1KS19EC043	Likitha H	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC061	Prashanth SK	Dr. Dinesh Kumar D S	3	2	3	2	3
02-01-23	1KS19EC005	Akshay	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC055	Pavan Kumar G R	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC039	Kashyap P	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC023	DHANYA SUKANTH B K	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC044	M Lokeshwari	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC045	Manu N Kandra	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC037	Manogna K M	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19C054	Nithin D	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19ET005	Mr MRUTHYUNJAYA GUDIBANDE	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19ET004	Mahadev A C	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19ET007	Niranjan S Rao	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC090	Suhas M	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1ks19ec106	Vishal Sanjay Raju	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC057	Pooja Sp	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC107	Vishnuraata Yadunandan	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC021	Danesh Raju v	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1ks19ec099	TUSHAR	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1KS19EC038	Karthik K	Dr. Dinesh Kumar D S	3	3	3	3	3
02-01-23	1ks19ec104	Vikas S	Dr. Dinesh Kumar D S	3	2	3	3	3
02-01-23	1KS19EC029	GONUGUNTLA SAI SIDDARTHA	Dr. Dinesh Kumar D S	3	3	3	3	3
03-01-23	1KS19EC063	PREETHAM G H	Dr. Dinesh Kumar D S	3	2	2	3	2
03-01-23	1KS19EC032	B.Y Harshitha	Dr. Dinesh Kumar D S	3	3	3	3	3
04-01-23	1ks19ec019	Chiranthana Yogananda K	Dr. Dinesh Kumar D S	2	2	2	2	2
			NO. OF 1S	**1**	**1**	**1**	**1**	**1**
			Total count	**104**	**104**	**104**	**104**	**104**
			Percentage	**99.04**	**99.04**	**99.04**	**99.04**	**99.04**
			Average	**99.04**				

K.S. INSTITUTE OF TECHNOLOGY, BANGALORE
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGG

YEAR / SEMESTER	**IV/VII**
COURSE TITLE	**COMPUTER NETWORKS**
COURSE CODE	**18EC71**
ACADEMIC YEAR	**2021-22**
BATCH	**2018-19**

CO Attainment Level	Significance
Level 3	60% and above students should have scored >= 60% of Total marks
Level 2	55% to 59% of students should have scored >= 60% of Total marks
Level 1	50% to 54% of students should have scored >= 60% of Total marks

For Direct attainment , 50% of CIE and 50% of SEE marks are considered.
For Indirect attainment, Course end survey is considered.
CO attainment is 90%of direct attainment + 10% of Indirect attainment.
PO attainment = CO-PO mapping strength/3 * CO attainment .

SL NO	USN	NAME	IA1						Assignment 1						IA2						Assignment 2						IA3						Assignment 3						EXTERNAL MARKS		
			IA1	CO1	Score	Target 60%	CO2	Score	Target 60%	A1	CO1	Score	Target 60%	CO2	Score	Target 60%	IA2	CO2	Score	Target 60%	CO3	Score	Target 60%	CO4	Score	Target 60%	A2	CO2	Score	Target 60%	CO3	Score	Target 60%	CO4	Score	Target 60%	IA3	CO4	Score	Target 60%	CO5	Score	Target 60%	A3	CO4	Score	Target 60%	CO5	Score	Target 60%	SEE	Score	Target 60%
	Maximum Marks		30	10		12				10	8			4			30	6			10						10	2						2			30	12			10				10	6			4			60		
1	1KS18EC001	[illegible]	29	18	3	Y	11	3	Y	9	5.4	3	Y	3.6	3	Y	27	6	3	Y	15	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	30	12	3	Y	18	3	Y	10	6.0	3	Y	4	3	Y	42	3	Y
2	1KS18EC002	ABHISHEK.V	25	14	3	Y	11	3	Y	10	6	3	Y	4	3	Y	25	4	3	Y	18	3	Y	3	1	N	10	2	3	Y	6	3	Y	2	3	Y	26	12	3	Y	18	3	Y	8	4.8	3	Y	3.2	3	Y	41	3	Y
3	1KS18EC003	ADITH.S	25	17	3	Y	8	3	Y	9	5.4	3	Y	3.6	3	Y	24	5	3	Y	14	3	Y	5	3	Y	10	2	3	Y	6	3	Y	2	3	Y	30	12	3	Y	18	3	Y	10	6.0	3	Y	4	3	Y	48	3	Y
4	1KS18EC004	[illegible]	29	18	3	Y	11	3	Y	8	4.8	3	Y	3.2	3	Y	21	6	3	Y	9	1	N	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	24	12	3	Y	18	3	Y	6	3.6	3	Y	2.4	3	Y	44	3	Y
5	1KS18EC005	AISHWARYA R	22	15	3	Y	7	2	N	8	4.8	3	Y	3.2	3	Y	25	3	1	N	16	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	28	12	3	Y	18	3	Y	6	3.6	3	Y	2.4	3	Y	38	3	Y
6	1KS18EC006	AKASH R	26	18	3	Y	8	3	Y	8	4.8	3	Y	3.2	3	Y	22	0	0	N	18	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	19	12	3	Y	12	3	Y	8	4.8	3	Y	3.2	3	Y	38	3	Y
7	1KS18EC007	AKHILA V	27	17	3	Y	10	3	Y	8	4.8	3	Y	3.2	3	Y	14	5	2	Y	3	0	N	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	25	12	3	Y	13	3	Y	7	4.2	3	Y	2.8	3	Y	42	3	Y
8	1KS18EC008	ANAGHA S	24	16	3	Y	8	3	Y	9	5.4	3	Y	3.6	3	Y	12	0	0	N	11	3	Y	1	0	N	10	2	3	Y	6	3	Y	2	3	Y	21	12	3	Y	17	3	Y	6	3.6	3	Y	2.4	3	Y	42	3	Y
9	1KS18EC009	[illegible]	23	13	3	Y	10	3	Y	8	4.8	3	Y	3.2	3	Y	28	5	3	Y	17	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	20	12	3	Y	10	2	N	6	4.8	3	Y	3.2	3	Y	49	3	Y
10	1KS18EC010	ASHRITHA S C	25	15	3	Y	10	3	Y	9	5.4	3	Y	3.6	3	Y	29	5	3	Y	9	1	N	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	25	12	3	Y	14	3	Y	9	5.4	3	Y	3.6	3	Y	39	3	Y
11	1KS18EC011	AYEESHA RUMAN	24	12	2	Y	12	3	Y	7	4.2	3	Y	2.8	3	Y	29	2	0	N	14	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	27	12	3	Y	17	3	Y	8	4.8	3	Y	3.2	3	Y	33	2	N
12	1KS18EC012	C A SUSHMA	22	16	3	Y	6	1	N	8	4.8	3	Y	3.2	3	Y	19	0	0	N	14	3	Y	5	3	Y	10	2	3	Y	6	3	Y	2	3	Y	17	12	3	Y	15	3	Y	7	4.2	3	Y	2.8	3	Y	44	3	Y
13	1KS18EC013	[illegible]	15	13	3	Y	2	0	N	9	5.4	3	Y	3.6	3	Y	2	0	0	N	3	0	N	4	3	Y	8	1.6	3	Y	4.8	3	Y	1.6	3	Y	12	12	3	Y	8	0	N	6	3.0	3	Y	2.4	3	Y	26	0	N
14	1KS18EC014	CHANDAN Y C	18	11	3	Y	7	2	N	6	3.6	3	Y	2.4	3	Y	17	2	0	N	15	3	Y	0	0	N	8	1.6	3	Y	4.8	3	Y	1.6	3	Y	16	12	3	Y	8	0	N	8	4.8	3	Y	3.2	3	Y	45	3	Y
15	1KS18EC015	CHARAN G	27	17	3	Y	10	3	Y	9	5.4	3	Y	3.6	3	Y	20	4	3	Y	12	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	22	12	3	Y	17	3	Y	4	2.4	0	N	1.6	0	N	46	3	Y
16	1KS18EC016	[illegible]	22	15	3	Y	7	2	N	8	4.8	3	Y	3.2	3	Y	22	5	3	Y	13	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	24	12	3	Y	15	3	Y	4	2.4	0	N	1.6	0	N	30	1	N
17	1KS18EC017	CHITHRITHA G R	26	16	3	Y	10	3	Y	10	6	3	Y	4	3	Y	24	0	0	N	18	3	Y	0	3	Y	9	1.8	3	Y	5.4	3	Y	1.8	3	Y	24	12	3	Y	18	3	Y	9	5.4	3	Y	3.6	3	Y	44	3	Y
18	1KS18EC018	DARSHAN V	16	8	0	N	8	3	Y	7	4.2	3	Y	2.8	3	Y	16	5	3	Y	5	0	N	0	3	Y	10	2	3	Y	6	3	Y	2	3	Y	20	12	3	Y	11	3	Y	4	2.4	0	N	1.6	0	N	44	3	Y
19	1KS18EC019	DARSHAN S	27	16	3	Y	11	3	Y	7	4.2	3	Y	2.8	3	Y	22	5	3	Y	17	3	Y	0	0	N	10	2	3	Y	6	3	Y	2	3	Y	26	12	3	Y	13	3	Y	2	1.2	0	N	0.8	0	N	40	2	Y
20	1KS18EC020	DEEKSHA S N	15	13	3	Y	2	0	N	9	5.4	3	Y	3.6	3	Y	18	0	0	N	12	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	21	12	3	Y	15	3	Y	9	5.4	3	Y	3.6	3	Y	41	3	Y
21	1KS18EC021	DEEPTHI ANDANI	23	14	3	Y	9	2	Y	8	4.8	3	Y	3.2	3	Y	11	5	3	Y	12	3	Y	0	0	N	10	2	3	Y	6	3	Y	2	3	Y	24	12	3	Y	12	3	Y	6	3.6	3	Y	2.4	3	Y	35	2	N
22	1KS18EC022	DHANUSHREE C	22	14	3	Y	8	3	Y	9	5.4	3	Y	3.6	3	Y	14	6	3	Y	8	0	N	0	0	N	10	2	3	Y	6	3	Y	2	3	Y	12	12	3	Y	12	3	Y	8	4.8	3	Y	3.2	3	Y	38	3	Y
23	1KS18EC023	DHEERAJ M S	28	16	3	Y	12	3	Y	10	6	3	Y	4	3	Y	27	5	3	Y	16	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	25	12	3	Y	16	3	Y	8	4.8	3	Y	3.2	3	Y	31	1	N
24	1KS18EC024	[illegible]	20	14	3	Y	6	1	N	8	4.8	3	Y	3.2	3	Y	25	3	1	N	16	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	14	12	3	Y	12	3	Y	7	4.2	3	Y	2.8	3	Y	38	2	Y
25	1KS18EC025	[illegible]	25	17	3	Y	8	3	Y	10	6	3	Y	4	3	Y	20	5	3	Y	11	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	25	12	3	Y	15	3	Y	7	4.2	3	Y	2.8	3	Y	44	2	Y
26	1KS18EC026	DIVAKARBABU Y	27	17	3	Y	10	3	Y	7	4.2	3	Y	2.8	3	Y	28	6	3	Y	16	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	20	12	3	Y	10	3	Y	9	5.4	3	Y	3.6	3	Y	32	2	Y
27	1KS18EC027	G J NITHIN	23	15	3	Y	8	3	Y	9	5.4	3	Y	3.6	3	Y	20	6	3	Y	12	3	Y	2	0	N	10	2	3	Y	6	3	Y	2	3	Y	24	12	3	Y	18	3	Y	9	5.4	3	Y	3.6	3	Y	32	1	N
28	1KS18EC028	GANESH P	27	17	3	Y	10	3	Y	9	5.4	3	Y	3.6	3	Y	23	4	3	Y	16	3	Y	3	1	N	10	2	3	Y	6	3	Y	2	3	Y	20	12	3	Y	12	3	Y	4	2.4	0	N	1.6	0	N	43	1	Y
29	1KS18EC029	GOKUL G	27	16	3	Y	11	3	Y	10	6	3	Y	4	3	Y	24	1	0	N	17	3	Y	6	3	Y		0	0	N	0	0	N	0	0	N	20	12	3	Y	12	3	Y	0	0.0	0	N	0	0	N	40	3	Y
30	1KS18EC030	HARSH SHARMA	18	9	1	N	9	3	Y	8	4.8	3	Y	3.2	3	Y	0	0	0	N	0	0	N	0	0	N	8	1.6	3	Y	4.8	3	Y	1.6	3	Y	20	12	3	Y	10	2	N	6	3.6	3	Y	2.4	3	Y	48	3	Y
31	1KS18EC031	HARSHITHA S	26	15	3	Y	11	3	Y	10	6	3	Y	4	3	Y	27	6	3	Y	16	3	Y	5	3	Y	10	2	3	Y	6	3	Y	2	3	Y	29	12	3	Y	18	3	Y	10	6.0	3	Y	4	3	Y	49	3	Y
32	1KS18EC032	JAHNAVI A P	25	15	3	Y	10	3	Y	7	4.2	3	Y	2.8	3	Y	28	6	3	Y	17	3	Y	5	3	Y	6	1.2	3	Y	3.6	3	Y	1.2	3	Y	18	12	3	Y	18	3	Y	10	6.0	3	Y	4	3	Y	44	3	Y
33	1KS18EC033	JANHAVI K P	24	14	3	Y	10	3	Y	8	4.8	3	Y	3.2	3	Y	25	6	3	Y	14	3	Y	5	3	Y	10	2	3	Y	6	3	Y	2	3	Y	21	12	3	Y	16	3	Y	7	4.2	3	Y	2.8	3	Y	43	3	Y
34	1KS18EC034	JHANAVI V	22	12	3	Y	10	3	Y	8	4.8	3	Y	3.2	3	Y	28	6	3	Y	16	3	Y	6	3	Y	6	1.2	3	Y	3.6	3	Y	1.2	3	Y	20	12	3	Y	17	3	Y	8	4.8	3	Y	3.2	3	Y	44	3	Y
35	1KS18EC035	JISHNU S	23	15	3	Y	8	3	Y	7	4.2	3	Y	2.8	3	Y	23	1	0	N	17	3	Y	5	3	Y	10	2	3	Y	6	3	Y	2	3	Y	18	12	3	Y	10	2	N	8	4.8	3	Y	3.2	3	Y	36	3	Y
36	1KS18EC036	[illegible]	25	14	3	Y	11	3	Y	7	4.2	3	Y	2.8	3	Y	20	0	0	N	14	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	12	12	3	Y	6	0	N	7	4.2	3	Y	2.8	3	Y	24	0	N
37	1KS18EC037	K RISHIKA RAVI	21	14	3	Y	7	2	N	8	4.8	3	Y	3.2	3	Y	19	0	0	N	14	3	Y	5	3	Y	9	1.8	3	Y	5.4	3	Y	1.8	3	Y	28	12	3	Y	18	3	Y	7	4.2	3	Y	2.8	3	Y	36	3	Y

38	1KS18EC038	KARISHMA M	29	17	3	Y	12	3	Y	7	4.2	3	Y	2.8	3	Y	14	2	0	N	8	0	N	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	11	12	3	Y	9	0	N	9	5.4	3	Y	3.6	3	Y	37	3	Y
39	1KS18EC039	KOMALA K V	27	15	3	Y	12	3	Y	7	4.2	3	Y	2.8	3	Y	25	4	3	Y	16	3	Y	5	3	Y	10	2	3	Y	6	3	Y	2	3	Y	10	12	3	Y	6	0	N	10	6.0	3	Y	4	3	Y	24	0	N
40	1KS18EC040	LAVANYA M	25	15	3	Y	10	3	Y	8	4.8	3	Y	3.2	3	Y	23	6	3	Y	17	3	Y	0	0	N	10	2	3	Y	6	3	Y	2	3	Y	24	12	3	Y	18	3	Y	4	2.4	0	N	1.6	0	N	42	3	Y
41	1KS18EC041	[illegible]	24	14	3	Y	10	3	Y	8	4.8	3	Y	3.2	3	Y	28	5	3	Y	18	3	Y	5	3	Y	10	2	3	Y	6	3	Y	2	3	Y	30	12	3	Y	18	3	Y	10	6.0	3	Y	4	3	Y	46	3	Y
42	1KS18EC042	MAHANTH SAI M	23	16	3	Y	7	2	N	8	4.8	3	Y	3.2	3	Y	21	4	3	Y	13	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	21	12	3	Y	11	3	Y	7	4.2	3	Y	2.8	3	Y	47	3	Y
43	1KS18EC043	MANOJ G S	20	14	3	Y	6	1	N	8	4.8	3	Y	3.2	3	Y	16	0	0	N	14	3	Y	2	0	N	8	1.6	3	Y	4.8	3	Y	1.6	3	Y	11	12	3	Y	9	0	N	6	3.6	3	Y	2.4	3	Y	41	3	Y
44	1KS18EC044	MEGHA R	28	16	3	Y	12	3	Y	9	5.4	3	Y	3.6	3	Y	23	2	0	N	17	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	29	12	3	Y	18	3	Y	9	5.4	3	Y	3.6	3	Y	44	3	Y
45	1KS18EC045	MEGHANA B S	27	16	3	Y	11	3	Y	9	5.4	3	Y	3.6	3	Y	13	0	0	N	13	3	Y	0	0	N	10	2	3	Y	6	3	Y	2	3	Y	19	12	3	Y	18	3	Y	9	5.4	3	Y	3.6	3	Y	45	3	Y
46	1KS18EC046	[illegible]	26	14	3	Y	12	3	Y	8	4.8	3	Y	3.2	3	Y	17	6	3	Y	9	1	N	2	0	N	10	2	3	Y	6	3	Y	2	3	Y	21	12	3	Y	15	3	Y	4	2.4	0	N	1.6	0	N	38	3	Y
47	1KS18EC047	[illegible]	24	14	3	Y	10	3	Y	6	3.6	3	Y	2.4	3	Y	20	6	3	Y	8	0	N	6	3	Y	10	2	3	Y	6	3	Y	2	1	Y	10	12	3	Y	10	2	N	4	2.4	0	N	1.6	0	N	41	3	Y
48	1KS18EC048	MONISHA B R	A	0	0	N	0	0	N	8	4.8	3	Y	3.2	3	Y	27	6	3	Y	16	3	Y	5	3	Y	10	2	3	Y	6	3	Y	2	3	Y	20	12	3	Y	10	2	N	10	6.0	3	Y	4	3	Y	32	1	N
49	1KS18EC049	[illegible]	26	16	3	Y	10	3	Y	6	3.6	3	Y	2.4	3	Y	20	4	3	Y	12	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	20	12	3	Y	14	3	Y	7	4.2	3	Y	2.8	3	Y	41	3	Y
50	1KS18EC050	NAGA OMKAR N	25	17	3	Y	8	3	Y	7	4.2	3	Y	2.8	3	Y	27	4	3	Y	17	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	28	12	3	Y	17	3	Y	6	3.6	3	Y	2.4	3	Y	45	3	Y
51	1KS18EC051	NAGASHREE A	23	13	3	Y	10	3	Y	7	4.2	3	Y	2.8	3	Y	20	5	3	Y	9	1	N	6	3	Y	9	1.8	3	Y	5.4	3	Y	1.8	3	Y	20	12	3	Y	12	3	Y	4	2.4	0	N	1.6	0	N	41	3	Y
52	1KS18EC052	NAMITH R	17	11	3	Y	6	1	N	7	4.2	3	Y	2.8	3	Y	21	0	0	N	15	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	19	12	3	Y	12	3	Y	4	2.4	0	N	1.6	0	N	38	3	Y
53	1KS18EC053	NAVYA M S	26	16	3	Y	10	3	Y	7	4.2	3	Y	2.8	3	Y	16	6	3	Y	5	0	N	5	3	Y	10	2	3	Y	6	3	Y	2	2	Y	20	12	3	Y	11	3	Y	8	4.8	3	Y	3.2	3	Y	49	3	Y
54	1KS18EC054	NIHARIKA S A	24	17	3	Y	7	2	N	10	6	3	Y	4	3	Y	27	5	3	Y	18	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	28	12	3	Y	18	3	Y	4	2.4	0	N	1.6	0	N	50	3	Y
55	1KS18EC055	NIROSHA G J	25	16	3	Y	9	3	Y	8	4.8	3	Y	3.2	3	Y	12	6	3	Y	6	0	N	0	0	N	10	2	3	Y	6	3	Y	2	3	Y	18	12	3	Y	18	3	Y	4	2.4	0	N	1.6	0	N	45	3	Y
56	1KS18EC056	NISHANTH J RAO	26	16	3	Y	10	3	Y	8	4.8	3	Y	3.2	3	Y	11	5	3	Y	3	0	N	3	1	N		0	0	N	0	0	N	0	0	N	17	12	3	Y	11	3	Y	4	2.4	0	N	1.6	0	N	41	3	Y
57	1KS18EC057	[illegible]	25	17	3	Y	8	3	Y	9	5.4	3	Y	3.6	3	Y	25	6	3	Y	15	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	23	12	3	Y	15	3	Y	7	4.2	3	Y	2.8	3	Y	47	3	Y
58	1KS18EC058	PARIKSHITH S	26	16	3	Y	10	3	Y	6	3.6	3	Y	2.4	3	Y	26	6	3	Y	16	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	18	12	3	Y	10	2	N	8	4.8	3	Y	3.2	3	Y	34	2	N
59	1KS18EC059	PAVAN KUMAR P	20	11	3	Y	9	3	Y	7	4.2	3	Y	2.8	3	Y	14	5	3	Y	4	0	N	3	3	Y		0	0	N	0	0	N	0	0	N	18	12	3	Y	10	2	N	0	0.0	0	N	0	0	N	38	3	Y
60	1KS16EC005	[illegible]	25	17	3	Y	8	3	Y	8	4.8	3	Y	3.2	3	Y	23	5	3	Y	14	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	21	12	3	Y	18	3	Y	4	2.4	0	N	1.6	0	N	33	2	N
61	1KS18EC060	POOJA S	19	12	3	Y	7	2	N	8	4.8	3	Y	3.2	3	Y	11	6	3	Y	5	0	N	0	0	N	10	2	2	Y	6	3	Y	2	3	Y	22	12	3	Y	12	3	Y	4	2.4	0	N	1.6	0	N	34	2	N
62	1KS18EC061	PRAKRUTHI S H	24	16	3	Y	8	3	Y	9	5.4	3	Y	3.6	3	Y	11	5	3	Y	3	0	N	3	1	N	10	2	3	Y	6	3	Y	2	3	Y	20	12	3	Y	12	3	Y	9	5.4	3	Y	3.6	3	Y	32	1	N
63	1KS18EC063	PUNEETH M	28	17	3	Y	11	3	Y	9	5.4	3	Y	3.6	3	Y	28	6	3	Y	16	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	18	12	3	Y	11	3	Y	9	5.4	3	Y	3.6	3	Y	48	3	Y
64	1KS18EC064	[illegible]	22	12	3	Y	10	3	Y	9	5.4	3	Y	3.6	3	Y	21	6	3	Y	15	3	Y	0	0	N	10	2	3	Y	6	3	Y	2	3	Y	23	12	3	Y	18	3	Y	9	5.4	3	Y	3.6	3	Y	39	3	Y
65	1KS18EC066	RAGHAVENDRA K [illegible]	29	18	3	Y	11	3	Y	10	6	3	Y	4	3	Y	22	5	3	Y	15	3	Y	2	0	N	10	2	3	Y	6	3	Y	2	3	Y	28	12	3	Y	18	3	Y	9	5.4	3	Y	3.6	3	Y	42	3	Y
66	1KS18EC067	RAGHU B T	22	14	3	Y	8	3	Y	10	6	3	Y	4	3	Y	25	5	3	Y	14	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	13	12	3	Y	7	0	N	9	5.4	3	Y	3.6	3	Y	44	3	Y
67	1KS18EC068	RAJ KRISHNA	16	8	0	N	8	3	Y	8	4.8	3	Y	3.2	3	Y	13	0	0	N	11	3	Y	2	0	N	10	2	3	Y	6	3	Y	2	3	Y	14	12	3	Y	11	3	Y	10	6.0	3	Y	4	3	Y	33	2	N
68	1KS18EC069	[illegible]	22	12	3	Y	10	3	Y	10	6	3	Y	4	3	Y	14	5	3	Y	9	1	N	0	0	N	9	1.8	3	Y	5.4	3	Y	1.8	3	Y		12	3	Y	0	0	N	9	5.4	3	Y	3.6	3	Y	29	0	N
69	1KS18EC070	RAM BAHADUR [illegible]	22	14	3	Y	8	3	Y	9	5.4	3	Y	3.6	3	Y	19	0	0	N	16	3	Y	3	1	N	9	1.8	3	Y	5.4	3	Y	1.8	3	Y	21	12	3	Y	16	3	Y	7	4.2	3	Y	2.8	3	Y	54	3	Y
70	1KS18EC071	[illegible]	14	10	2	N	4	0	N	8	4.8	3	Y	3.2	3	Y	11	0	0	N	10	2	N	1	0	N	6	1.2	3	Y	3.6	3	Y	1.2	3	Y	16	12	3	Y	6	0	N	6	3.6	3	Y	2.4	3	Y	33	2	N
71	1KS18EC073	RITHVIK P	23	14	3	Y	9	3	Y	8	4.8	3	Y	3.2	3	Y	24	5	3	Y	14	3	Y	5	3	Y	6	1.2	3	Y	3.6	3	Y	1.2	3	Y	18	12	3	Y	10	2	N	7	4.2	3	Y	2.8	3	Y	36	3	Y
72	1KS18EC074	S MANOJ	24	14	3	Y	10	3	Y	10	6	3	Y	4	3	Y	25	6	3	Y	18	3	Y	1	0	N	9	1.8	3	Y	5.4	3	Y	1.8	3	Y	24	12	3	Y	16	3	Y	10	6.0	3	Y	4	3	Y	44	3	Y
73	1KS18EC075	S RAHUL	28	16	3	Y	12	3	Y	10	6	3	Y	4	3	Y	26	5	3	Y	17	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	21	12	3	Y	13	3	Y	4	2.4	0	N	1.6	0	N	42	3	Y
74	1KS18EC076	[illegible]	26	15	3	Y	11	3	Y	10	6	3	Y	4	3	Y	27	6	3	Y	17	3	Y	4	3	Y	10	2	3	Y	6	3	Y	2	3	Y	22	12	3	Y	18	3	Y	9	5.4	3	Y	3.6	3	Y	44	3	Y
75	1KS18EC077	SAGAR T C	25	14	3	Y	11	3	Y	7	4.2	3	Y	2.8	3	Y	15	0	0	N	10	2	N	5	3	Y		0	0	N	0	0	N	0	0	N	10	12	3	Y	10	2	N	9	5.4	3	Y	3.6	3	Y	23	0	N
76	1KS18EC078	SANJANA B	29	17	3	Y	12	3	Y	10	6	3	Y	4	3	Y	27	4	3	Y	17	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	24	12	3	Y	18	3	Y	10	6.0	3	Y	4	3	Y	37	3	Y
77	1KS18EC079	[illegible]	18	11	3	Y	7	2	N	8	4.8	3	Y	3.2	3	Y	16	5	3	Y	8	0	N	3	1	N	10	2	3	Y	6	3	Y	2	3	Y	13	12	3	Y	5	0	N	4	2.4	0	N	1.6	0	N	34	2	N
78	1KS18EC080	SHASHANK H K	20	14	3	Y	6	1	N	9	5.4	3	Y	3.6	3	Y	13	4	3	Y	9	1	N	0	0	N	6	1.2	3	Y	3.6	3	Y	1.2	3	Y	7	12	3	Y	4	0	N	6	3.6	3	Y	2.4	3	Y	42	3	Y
79	1KS18EC081	[illegible]	26	16	3	Y	10	3	Y	8	4.8	3	Y	3.2	3	Y	24	2	0	N	18	3	Y	4	3	Y	9	1.8	3	Y	5.4	3	Y	1.8	3	Y	29	12	3	Y	17	3	Y	10	6.0	3	Y	4	3	Y	48	3	Y
80	1KS18EC082	[illegible]	22	14	3	Y	8	3	Y	8	4.8	3	Y	3.2	3	Y	24	5	3	Y	18	3	Y	1	0	N	10	2	3	Y	6	3	Y	2	3	Y	27	12	3	Y	18	3	Y	10	6.0	3	Y	4	3	Y	46	3	Y
81	1KS18EC083	SHREYA V DEV	26	16	3	Y	10	3	Y	8	4.8	3	Y	3.2	3	Y	24	3	1	N	15	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	23	12	3	Y	17	3	Y	4	2.4	0	N	1.6	0	N	36	3	Y
82	1KS18EC084	SHREYAS C	26	16	3	Y	10	3	Y	10	6	3	Y	4	3	Y	23	6	3	Y	11	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	28	12	3	Y	18	3	Y	4	2.4	0	N	1.6	0	N	45	3	Y
83	1KS18EC085	SHREYAS D R	28	17	3	Y	11	3	Y	10	6	3	Y	4	3	Y	27	6	3	Y	15	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	26	12	3	Y	17	3	Y	10	6.0	3	Y	4	3	Y	49	3	Y
84	1KS18EC086	SHRIKANTH C K	22	16	3	Y	6	1	N	8	4.8	3	Y	3.2	3	Y	16	2	0	N	9	1	N	5	3	Y	8	1.6	3	Y	4.8	3	Y	1.6	3	Y	12	12	3	Y	4	0	N	4	2.4	0	N	1.6	0	N	41	3	Y
85	1KS18EC087	SIRI RAVINATH	25	15	3	Y	10	3	Y	10	6	3	Y	4	3	Y	25	5	3	Y	14	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	2	12	3	Y	0	0	N	7	4.2	3	Y	2.8	3	Y	31	1	N
86	1KS18EC088	SIRISHA.M	29	18	3	Y	11	3	Y	10	6	3	Y	4	3	Y	26	6	3	Y	18	3	Y	2	0	N	10	2	3	Y	6	3	Y	2	3	Y	24	12	3	Y	12	3	Y	10	6.0	3	Y	4	3	Y	42	3	Y
87	1KS18EC090	SOMASHEKAR M	26	14	3	Y	12	3	Y	8	4.8	3	Y	3.2	3	Y	25	6	3	Y	17	3	Y	2	0	N	10	2	3	Y	6	3	Y	2	3	Y	28	12	3	Y	16	3	Y	10	6.0	3	Y	4	3	Y	45	3	Y
88	1KS18EC091	SUDHEER B	24	16	3	Y	8	3	Y	9	5.4	3	Y	3.6	3	Y	17	0	0	N	14	3	Y	3	1	N	10	2	3	Y	6	3	Y	2	3	Y	14	12	3	Y	6	0	N	7	4.2	3	Y	2.8	3	Y	33	2	N
89	1KS18EC092	SUJAY R	26	16	3	Y	10	3	Y	9	5.4	3	Y	3.6	3	Y	25	5	3	Y	15	3	Y	5	3	Y	10	2	3	Y	6	3	Y	2	3	Y	24	12	3	Y	15	3	Y	10	6.0	3	Y	4	3	Y	30	1	N
90	1KS18EC093	SUPRIYA S	26	17	3	Y	9	3	Y	9	5.4	3	Y	3.6	3	Y	27	6	3	Y	15	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	27	12	3	Y	16	3	Y	7	4.2	3	Y	2.8	3	Y	46	3	Y
91	1KS18EC094	[illegible]	29	18	3	Y	11	3	Y	10	6	3	Y	4	3	Y	29	6	3	Y	17	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	26	12	3	Y	16	3	Y	10	6.0	3	Y	4	3	Y	44	3	Y
92	1KS18EC095	SUSHMA.A.V	28	16	3	Y	12	3	Y	9	5.4	3	Y	3.6	3	Y	21	6	3	Y	15	3	Y	0	0	N	10	2	3	Y	6	3	Y	2	3	Y	17	12	3	Y	14	3	Y	4	2.4	0	N	1.6	0	N	54	3	Y
93	1KS18EC096	SUSHMITHA R	27	17	3	Y	10	3	Y	9	5.4	3	Y	3.6	3	Y	26	6	3	Y	15	3	Y	5	3	Y	9	1.8	3	Y	5.4	3	Y	1.8	3	Y	11	12	3	Y	5	0	N	7	4.2	3	Y	2.8	3	Y	45	3	Y
94	1KS18EC097	THANUSH R S	25	15	3	Y	10	3	Y	9	5.4	3	Y	3.6	3	Y	20	5	3	Y	10	2	N	5	3	Y	10	2	3	Y	6	3	Y	2	3	Y	15	12	3	Y	11	3	Y	4	2.4	0	N	1.6	0	N	40	3	Y
95	1KS18EC098	THANUSHREE D	25	15	3	Y	10	3	Y	10	6	3	Y	4	3	Y	11	0	0	N	9	1	N	2	0	N	10	2	3	Y	6	3	Y	2	3	Y	26	12	3	Y	16	3	Y	10	6.0	3	Y	4	3	Y	55	3	Y
96	1KS18EC099	VAISHNAVI G	29	18	3	Y	11	3	Y	10	6	3	Y	4	3	Y	18	6	3	Y	12	3	Y	0	0	N	10	2	3	Y	6	3	Y	2	3	Y	12	12	3	Y	10	2	N	10	6.0	3	Y	4	3	Y	29	0	N
97	1KS18EC100	[illegible]	19	11	3	Y	8	3	Y	6	3.6	3	Y	2.4	3	Y	14	5	3	Y	9	1	N	0	0	N	6	1.2	3	Y	3.6	3	Y	1.2	3	Y	10	12	3	Y	1	0	N	4	2.4	0	N	1.6	0	N	8	0	N
98	1KS18EC101	VANDANA.K	24	14	3	Y	10	3	Y	8	4.8	3	Y	3.2	3	Y	24	6	3	Y	12	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	20	12	3	Y	12	3	Y	10	6.0	3	Y	4	3	Y	44	3	Y
99	1KS18EC102	VARSHINI.B.M	24	14	3	Y	10	3	Y	10	6	3	Y	4	3	Y	25	5	3	Y	14	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	23	12	3	Y	14	3	Y	4	2.4	0	N	1.6	0	N	42	3	Y
100	1KS18EC103	VASANTH PAI M	21	9	1	N	12	3	Y	10	6	3	Y	4	3	Y	26	6	3	Y	14	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	7	12	3	Y	7	0	N	4	2.4	0	N	1.6	0	N	34	2	N
101	1KS18EC104	VIJAY BABU K	25	14	3	Y	9	3	Y	9	5.4	3	Y	3.6	3	Y	27	6	3	Y	15	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	20	12	3	Y	10	2	N	4	2.4	0	N	1.6	0	N	36	3	Y

102	1KS18EC105	VINAY K	28	17	3	Y	11	3	Y	10	6	3	Y	4	3	Y	27	5	3	Y	16	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	19	12	3	Y	17	3	Y	4	2.4	0	N	1.6	0	N	32	1	N
103	1KS18EC106	VINAY S	26	16	3	Y	10	3	Y	10	6	3	Y	4	3	Y	19	4	3	Y	13	3	Y	2	0	N	10	2	3	Y	6	3	Y	2	3	Y	10	12	3	Y	2	0	N	4	2.4	0	N	1.6	0	N	44	3	Y
104	1KS18EC108	[illegible]	26	16	3	Y	10	3	Y	10	6	3	Y	4	3	Y	26	5	3	Y	15	3	Y	6	3	Y	10	2	3	Y	6	3	Y	2	3	Y	13	12	3	Y	11	3	Y	4	2.4	0	N	1.6	0	N	45	3	Y
105	1KS18EC109	VISHWAS P	22	14	3	Y	8	3	Y	10	6	3	Y	4	3	Y	15	4	3	Y	11	3	Y	0	0	N	10	2	3	Y	6	3	Y	2	3	Y	16	12	3	Y	16	3	Y	4	2.4	0	N	1.6	0	N	32	1	N
106	1KS18EC110	VIVEKGOWDA J	22	14	3	Y	8	3	Y	7	4.2	3	Y	2.8	3	Y	26	6	3	Y	15	3	Y	5	3	Y	10	2	3	Y	6	3	Y	2	3	Y	20	12	3	Y	10	2	N	4	2.4	0	N	1.6	0	N	40	3	Y
107	1KS18EC111	[illegible]	27	16	3	Y	11	3	Y	9	5.4	3	Y	3.6	3	Y	28	5	3	Y	18	3	Y	5	3	Y	10	2	3	Y	6	3	Y	2	3	Y	25	12	3	Y	14	3	Y	7	4.2	3	Y	2.8	3	Y	51	3	Y
108	1KS19EC400	HEMANTHA V	20	14	3	Y	6	1	N	10	6	3	Y	4	3	Y	14	5	3	Y	9	1	N	0	0	N	8	1.6	3	Y	4.8	3	Y	1.6	3	Y	17	12	3	Y	12	3	Y	4	2.4	0	N	1.6	0	N	27	0	N
109	1KS19EC401	KARTHIK B P	14	9	1	N	5	0	N	9	5.4	3	Y	3.6	3	Y	18	6	3	Y	9	1	N	3	1	N	8	1.6	3	Y	4.8	3	Y	1.6	3	Y	15	12	3	Y	15	3	Y	4	2.4	0	N	1.6	0	N	22	0	N
110	1KS19EC402	[illegible]	24	16	3	Y	8	3	Y	10	6	3	Y	4	3	Y	16	3	3	Y	9	1	N	2	0	N	8	1.6	3	Y	4.8	3	Y	1.6	3	Y	10	12	3	Y	4	0	N	4	2.4	0	N	1.6	0	N	36	3	Y
111	1KS19EC403	NAVEEN G	18	9	1	N	9	3	Y	10	6	3	Y	4	3	Y	13	5	3	Y	8	0	N	0	0	N	8	1.6	3	Y	4.8	3	Y	1.6	3	Y	20	12	3	Y	13	3	Y	4	2.4	0	N	1.6	0	N	35	2	N
112	1KS19EC405	PRUTHVI DINESH	17	11	3	Y	6	1	N	10	6	3	Y	4	3	Y	13	2	0	N	11	3	Y	0	0	N	10	2	3	Y	6	3	Y	2	3	Y	15	12	3	Y	12	3	Y	10	6.0	3	Y	4	3	Y	36	3	Y
113	1KS19EC406	RAGHOTHAM C G	17	11	3	Y	6	1	N	9	5.4	3	Y	3.6	3	Y	19	5	3	Y	11	3	Y	3	1	N	10	2	3	Y	6	3	Y	2	3	Y	16	12	3	Y	12	3	Y	10	6.0	3	Y	4	3	Y	22	0	N
114	1KS19EC407	SADHANA M	10	10	2	N	0	0	N	10	6	3	Y	4	3	Y	12	4	3	Y	3	0	N	5	3	Y	8	1.6	3	Y	4.8	3	Y	1.6	3	Y	9	12	3	Y	6	0	N	8	4.8	3	Y	3.2	3	Y	21	0	N
115	1KS19EC408	SINDHU G	21	13	3	Y	8	3	Y	8	4.8	3	Y	3.2	3	Y	10	4	3	Y	0	0	N	6	3	Y	8	1.6	3	Y	4.8	3	Y	1.6	3	Y	14	12	3	Y	8	0	N	4	2.4	0	N	1.6	0	N	35	2	N
116	1KS19EC409	VARSHA M S	22	15	3	Y	7	2	N	8	4.8	3	Y	3.2	3	Y	15	4	3	Y	11	3	Y	0	0	N	8	1.6	3	Y	4.8	3	Y	1.6	3	Y	8	12	3	Y	8	0	N	4	2.4	0	N	1.6	0	N	28	0	N
	CO				CO1			CO2				CO1			CO2				CO2			CO3			CO4				CO2			CO3			CO4				CO4			CO5				CO4			CO5			SEE	
	Number of Not Attempted(NA)					0			0				0			0				0			0			0				0			0			0				0			0				0			0			0
	Score index & No of Y's				0.6	107		2.61	92			3.0	116		3.0	116			2.3	55		2.3	84			73			2.9	112		2.9	112		2.9	112			3	116		2.3	82			2.0	77		2.0	77		2.4	83
	No. of N's					9			24				0			0				26			32			43				4			4			4				0			34				39			39			33
	CO Attainment					92			79				100			100				48			72			63				97			97			97				100			71				66			66			72
	Level					3			3				3			3				3			3							3			3							3			3				3			3			3

CO	CIE	SEE	DIRECT	Level	ATT	Fina
CO1	96.12	72	83.84	3	3	3
CO2	85.94	72	78.75	3	3	3
CO3	84.48	72	78.02	3	3	3
CO4	81.47	72	76.51	3	3	3
CO5	68.55	72	70.04	3	3	3
AVERAGE						3.0

CO	Score
CO1	1.22
CO2	2.43
CO3	2.38
CO4	2.72
CO5	2.38

Co-Po Mapping Table

CO'S	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	–	–	2	–	–	–	2	2	–	–	3	2
CO2	3	2	–	–	2	–	–	–	2	2	–	–	3	2
CO3	3	2	–	–	2	–	–	–	2	2	–	–	3	2
CO4	3	2	–	–	2	–	–	–	2	2	–	–	3	2
CO5	3	2	–	–	2	–	–	–	2	2	–	–	3	2
AVG	3.0	2.0			2.0				2.00	2.00			3.0	2.0

PO Attainment

CO'S	CO Attainment	CO RES	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3.00	Y	3	2			2.0				2.0	2.0			3	2
CO2	3.00	Y	3	2			2.0				2.0	2.0			3	2
CO3	3.00	Y	3	2			2.0				2.0	2.0			3	2
CO4	3.00	Y	3	2			2.0				2.0	2.0			3	2
CO5	3.00	Y	3	2			2.0				2.0	2.0			3	2
Average			3	2			2				2	2			3	2

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ
("ವಿ ಟಿ ಯು ಅಧಿನಿಯಮ ೧೯೯೪" ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)
VISVESVARAYA TECHNOLOGICAL UNIVERSITY
(State University of Government of Karnataka Established as per the VTU Act, 1994)
"JnanaSangama" Belagavi-590018, Karnataka, India

Prof. Dr. B. E. Rangaswamy, Ph.D.
Fax : (0831) 2405467

Phone: (0831) 2498100 REGISTRAR

REF: VTU/BGM/ACA/2022-23/ 6241

DATE: 21 JAN 2023

Revised-NOTIFICATION

Subject: - Revised-Academic Calendar of 3rd semester of B.E./B.Tech., programs of University regarding...

Reference: Dean Faculty of Engineering, VTU Belagavi approval dated 20.01.2023
Hon'ble Vice-Chancellor's approval dated: 20.01.2023

The **revised-academic calendar** concerned to **3rd semester of** B.E./B.Tech., programs of the University for the academic year 2022-23 are hereby notified as mentioned below;

Revised Academic Calendar for 3rd-semester B.E./B.Tech. Programs

Details	Existing Dates	Revised Dates
Commencement of III semester	31.10.2022	31.10.2022
Commencement of Classes for Lateral Entry students	-----	06.02.2023
Last working date	11.02.2023	01.04.2023
Practical Examinations Regular Students	13.02.2023 To 21.02.2023	04.04.2023 To 13.04.2023
Theory Examinations	22.02.2023 To 22.03.2023	17.04.2023 To 05.05.2023
Practical Examination for Lateral Entry students	------	08.05.2023 To 13.05.2023
Intra/Inter Institute Internship	26.03.2023 To 16.04.2023	----
Commencement of IV semester	17.04.2023	15.05.2023

Please Note:

- The Institute needs to function for **six days** a week with **Saturday** being a full working day. Timing for the classes is either 08.00 am to 04.15 pm or 09.00 am to 05.00 pm in total 08 hours a day. #if required, the college can also plan to have extra classes on Sundays to complete academic activities within the duration mentioned.
- **Separate classes** should be conducted for lateral entry students as per the revised academic calendar; however, the regular students may attend the classes along with lateral entry students for review.
- Notification regarding the Calendar of Events relating to the conduct of University **Examinations** will be issued by the Registrar (Evaluation) from time to time.
- Academic Calendar **may be modified** based on guidelines/directions issued in the future by MHRD/UGC/AICTE/State Government.
- Academic Calendar is also applicable for **Autonomous Colleges.** If any changes are to be affected by Autonomous Colleges in the academic terms and examination schedule, they could do so with the approval of the University.
- The college has to conduct offline classes to cover **80%** of the syllabus of the courses; however, **20%** of the syllabus can be covered in virtual model (Online) mode. **Attendance** of the students for offline and online classes is mandatory and records should be maintained and submitted to the university whenever informed.
- AICTE Activity point details circular will be issued by the Registrar's office separately.
- If any clarification/correction, please email-**registrar@vtu.ac.in or sbhvtuso@yahoo.com**
- **Intra/Inter Institute Internship for lateral entry students shall be conducted parallelly with academic activities of even the semester.**

The Principals of Affiliated, Constituent and Autonomous Engineering Colleges, Chairpersons of the University departments are hereby informed to bring the revised-academic calendar to the notice of all concerned.

Sd/-

REGISTRAR

To,

1. The Principals of all affiliated/ constituent /Autonomous Engineering Colleges under the ambit of VTU Belagavi.
2. The chairperson, of the Department of Mechanical Engineering /Civil Engineering /Computer Science and Engineering& Communication Electronics Engineering of the University.

Copy to.

1. To the Hon'ble Vice-Chancellor through the secretary to VC, VTU Belagavi for information
2. The Registrar (Evaluation), VTU Belagavi for information.
3. The Regional Directors (I/c) of all the regional offices of VTU for circulation.
4. The Director I/c. ITI SMU, VTU Belagavi for information and to make arrangements to upload Academic Calendar on the VTU web portal.
5. The Director of Physical Education, VTU Belagavi for information
6. OS for information and make arrangements to send the circular regarding AICTE Activity Points
7. All the concerned Special Officer/s and Caseworker/s of the academic section, VTU, Belagavi

24.1.23

REGISTRAR

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ
("ವಿ ಟಿ ಯು ಅಧಿನಿಯಮ ೧೯೯೪" ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)
VISVESVARAYA TECHNOLOGICAL UNIVERSITY
(State University of Government of Karnataka Established as per the VTU Act, 1994)
"JnanaSangama" Belagavi-590018, Karnataka, India

REGISTRAR

Phone : (0831) 2498100
Fax : (0831) 2405467

REF: VTU/BGM/ACA/2022-23/ 3000

DATE: 3 SEP 2022

NOTIFICATION

Subject: - Academic Calendar of ODD semesters B.E./B.Tech./B.Plan./B.Arch. programs of University regarding...

Reference: Hon'ble Vice-Chancellor's approval dated: 03.09.2022

The academic calendar concerned to **ODD semesters of B.E./B.Tech./B.Plan./B.Arch.** programs of University for academic year 2022-23 are hereby notified as mentioned in the attached sheet;

The Principals of Affiliated, Constituent and Autonomous Engineering Colleges are hereby informed to bring the academic calendar to the notice of all concerned.

Encl: As mentioned

Sd/-

REGISTRAR

To,

1. The Principals of all affiliated/ constituent /Autonomous Engineering Colleges under the ambit of VTU Belagavi.
2. The chairperson, Department of Mechanical Engineering /Civil Engineering /Computer Science and Engineering and Business Studies of the University.

Copy to.

1. To the Hon'ble Vice-Chancellor through the secretary to VC, VTU Belagavi for information
2. The Registrar (Evaluation), VTU Belagavi for information.
3. The Regional Directors (I/c) of all the regional offices of VTU for circulation.
4. The Director I/c. ITI SMU, VTU Belagavi for information and to make arrangements to upload revised Academic Calendar on the VTU web portal.
5. The Director of Physical Education, VTU Belagavi for information
6. PS to Registrar VTU Belagavi
7. All the concerned Special Officer/s and Caseworker/s of the academic section, VTU, Belagavi

Reg 03/09/2022 BE

Registrar

Academic Calendar for ODD Semester of UG programs for the year 2022-23

	I semester B.E./B.Tech.	I semester B.Arch./B.Plan	I semester B.Sc.	III semester B.E./ B.Tech.	III Semester B.Arch.	III semester B. Plan	III Semester B.Sc.	V Semester B.E./B.Tech.	V Semester B.Arch./ B.Plan.	VII semester B.E./B.Tech.	VII semester B.Plan.	VII semester B.Arch	IX semester B.Arch
Commencement of ODD Semester	# 10.10.2022	# 10.10.2022	10.10.2022 (Tentative)	11.10.2022	31.10.2022	31.10.2022	10.10.2022	10.10.2022	12.09.2022	21.08.2022	21.08.2022	19.09.2022	01.09.2022
Internship				11.10.2022 To 30.10.2022						21.08.2022 To 17.09.2022	21.08.2022 To 24.09.2022		
Commencement of Classes				31.10.2022	31.10.2022	31.10.2022	10.10.2022	10.10.2022	12.09.2022	19.09.2022	26.09.2022	19.09.2022	01.09.2022
Last Working day of ODD Semester				11.02.2023	11.02.2023	11.02.2023	28.01.2023	27.01.2023	31.12.2022	31.12.2022	07.01.2023	31.12.2022	20.12.2022
Practical Examination				13.02.2023 To 21.02.2023	13.02.2023 To 21.02.2023	13.02.2023 To 21.02.2023	01.02.2023 To 09.02.2023	30.01.2023 To 09.02.2023	03.01.2023 To 13.01.2023	03.01.2023 To 13.01.2023	09.01.2023 To 14.01.2023	03.01.2023 To 13.01.2023	21.12.2022 To 31.12.2022
Theory Examinations				22.02.2023 To 22.03.2023	22.02.2023 To 22.03.2023	22.02.2023 To 22.03.2023	13.02.2023 To 03.03.2023	13.02.2023 To 18.03.2023	16.01.2023 To 15.02.2023	16.01.2023 To 15.02.2023	16.01.2023 To 15.02.2023	16.01.2023 To 15.02.2023	-----
Internship			*	26.03.2023 To 16.04.2023	---	---		---	---		---		---
Internship Viva Voce/ Project viva				---	---	---		---	---	---	---		---
Commencement of EVEN Semester				17.04.2023	17.04.2023	17.04.2023	20.03.2023	20.03.2023	20.03.2023	20.02.2023	20.02.2023	20.02.2023	06.01.2023

Please Note:

- The academic sessions for ODD semesters should commence from the **dates mentioned** above. **# Commencement of Induction Program As per AICTE Academic Calendar 2022-23**
- The commencement date of VII semester B.E./B.Tech/, is postponed from **12.09.2022 to 19.09.2022** to cover 04 weeks of Internship duration. The students of B.E./B.Tech., compulsorily have to complete the Internship in this duration only.
- The commencement date of VII semester B.Plan., is postponed from **12.09.2022 to 26.09.2022** to cover 06 weeks of Internship duration.
- Students joining to VII semester B.E./B.Tech/B.Plan should complete the **Internship** before the commencement of the classes.
- The Institute needs to function for **six days** a week with additional hours **(Saturday is a full working day).** #if required, the college can also plan to have extra classes on Sundays to complete academic activities within the duration mentioned.
- The faculty/staff shall be available to undertake any work assigned by the university.
- Notification regarding the Calendar of Events relating to the conduct of University **Examinations** will be issued by the Registrar (Evaluation) from time to time.
- Academic Calendar **may be modified** based on guidelines/directions issued in the future by MHRD/UGC/AICTE/State Government.
- Academic Calendar is also applicable for **Autonomous Colleges.** If any changes are to be effected by Autonomous Colleges in the academic terms and examination schedule, they could do so with the approval of the University.
- The college has to conduct offline classes to cover **80%** of the syllabus of the courses; however, **20%** of the syllabus can be covered in virtual model (Online) mode. **Attendance** of the students for offline and online classes is mandatory and records should be maintained and submitted to the university whenever informed.
- If any clarification/correction, please email to-sbhvtuso@gmail.com

03/09/2022
REGISTRAR

* **Internship for Lateral Entry Students**

K.S INSTITUT E OF TECHNOLOGY, BENGALURU-560109

TENTATIVE CALENDAR OF EVENTS: III ODD SEMESTER (2022-2023)

SESSION: OCT 2022 – FEB 2023

Week No.	Month	Day						Days	Activities
		Mon	Tue	Wed	Thu	Fri	Sat		
1	OCT/NOV	31*	1H	2	3	4 TA	5 DH	4	31* - Commencement of III Sem 1- Kannada Rajyotsava
2	NOV	7	8	9	10	11H	12	5	11- Kanakadasa Jayanti 12- Tuesday Time Table
3	NOV	14	15	16	17	18	19 DH	5	
4	NOV	21	22	23	24	25	26 TA	6	26 - Wednesday Time Table
5	NOV/DEC	28 T1	29 T1	30 T1	1	2	3 DH	5	
6	DEC	5	6	7	8 LT1	9 LT1	10 LT1	6	10- Tuesday Time Table
7	DEC	12 * FFB1	13 BV	14 ASD	15	16	17 DH	5	12* - First Faculty Feed Back
8	DEC	19	20	21	22	23	24	6	24 - Wednesday Time Table
9	DEC	26	27	28	29	30	31 TA	6	31 - Monday Time Table
10	JAN	2 T2	3 T2	4 T2	5	6	7 DH	5	
11	JAN	9	10	11	12 BV	13 ASD	14 H	5	14- Makara Sankranthi
12	JAN	16* FFB2	17	18	19	20	21 DH	5	16* - First Faculty Feed Back
13	JAN	23	24	25	26 H	27	28	5	26- Republic Day 28- Wednesday Time Table
14	JAN/FEB	30	31	1 TA	2 T3	3 T3	4 DH	5	
15	FEB	6 T3	7	8 LT2	9 LT2	10 LT2	11*	6	11- Thursday Time Table 11* - Last Working day
Total No of Working Days : 79									

Total Number of working days (Excluding holidays and Tests)=64

H	Holiday
BV	Blue Book Verification
T1,T2,T3	Tests 1,2, 3
ASD	Attendance & Sessional Display
DH	Declared Holiday
LT	Lab Test
TA	Test attendance

Monday	13
Tuesday	13
Wednesday	13
Thursday	13
Friday	12
Total	**64**

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TENTATIVE CALENDAR OF EVENTS: V ODD SEMESTER (2022-2023)

SESSION: OCT 2022 – JAN 2023

Week No.	Mouth	Day						Days	Activities
		Mon	Tue	Wed	Thu	Fri	Sat		
1	OCT	10*	11	12	13	14	15	6	10* - Commencement of V Sem 15-Wednesday Time Table
2	OCT	17	18	19	20	21	22 DH	5	
3	OCT	24 H	25	26 H	27	28	29	4	24-Naraka Chaturdashi 26- Balipadyami Deepavalli 29- Friday Time Table
4	OCT/NOV	31	1 H	2	3	4 TA	5 DH	4	1- Kannada Rajyotsava
5	NOV	7 T1	8 T1	9 T1	10	11H	12	5	11- Kanakadasa Jayanti 12- Wednesday Time Table
6	NOV	14	15	16 LT1	17 LT1	18 LT1	19 DH	5	
7	NOV	21* FFB1	22 BV	23 ASD	24	25	26	6	21* - First Faculty Feed Back 26 - Monday Time Table
8	NOV/DEC	28	29	30	1	2	3 DH	5	
9	DEC	5	6	7	8	9	10 TA	6	10- Tuesday Time Table
10	DEC	12 T2	13 T2	14 T2	15	16	17 DH	5	
11	DEC	19* FFB2	20	21	22 BV	23	24 ASD	6	19* -Second Faculty Feed Back 24 - Thursday Time Table
12	DEC	26	27	28	29	30	31 DH	5	
13	JAN	2	3	4	5	6	7	6	7-Wednesday Time Table
14	JAN	9	10 TA	11 T3	12 T3	13 T3	14 DH	5	
15	JAN	16	17	18 LT2	19 LT2	20 LT2	21*	6	21- Wednesday Time Table 21* - Last Working day
Total No of Working Days : 79									

Total Number of working days (Excluding holidays and Tests)=64

H	Holiday
BV	Blue Book Verification
T1,T2,T3	Tests 1,2, 3
ASD	Attendance & Sessional Display
DH	Declared Holiday
LT	Lab Test
TA	Test attendance

Monday	13
Tuesday	13
Wednesday	13
Thursday	13
Friday	12
Total	**64**

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TENTATIVE CALENDAR OF EVENTS: VII ODD SEMESTER (2022-2023)

SESSION: SEP 2022 – DEC 2022

Week No.	Month	Day						Days	Activities
		Mon	Tue	Wed	Thu	Fri	Sat		
1	SEP	19*	20	21	22	23	24 DH	5	19*-Commencement of VII Semester
2	SEP/OCT	26	27	28	29	30	1	6	1 - Wednesday Time Table
3	OCT	3	4II	5II	6	7	8 DH	3	4-Ayudha Pooja 5- Vijaya Dasami
4	OCT	10	11	12	13	14	15 TA	6	15-Friday Time Table
5	OCT	17 T1	18 T1	19 T1	20	21	22 DH	5	
6	OCT	24 II	25	26 II	27 LT1	28LT1	29 LT1	4	24-Naraka Chaturdashi 26- Balipadyami Deepavalli
7	OCT/NOV	31	1II	2	3* FFB1	4 BV	5 DH	4	1- Kannada Rajyotsava 3* - First Faculty Feed Back
8	NOV	7 ASD	8	9	10	11H	12	5	11- Kanakadasa Jayanti 12- Tuesday Time Table
9	NOV	14	15	16	17	18 TA	19 DH	5	
10	NOV	21 T2	22 T2	23 T2	24	25	26	6	26 – Wednesday Time Table
11	NOV/DEC	28 * FFB2	29	30 BV	1	2 ASD	3 DH	5	28* -Second Faculty Feed Back
12	DEC	5	6	7	8	9	10	6	10- Tuesday Time Table
13	DEC	12	13	14	15	16	17 DH	5	
14	DEC	19	20	21 TA	22 T3	23 T3	24 T3	6	
15	DEC	26	27	28 LT2	29 LT2	30 LT2	31*	6	31-Monday Time Table 31 - Last Working day
Total No of Working Days : 77									

Total Number of working days (Excluding holidays and Tests)=62

H	Holiday
BV	Blue Book Verification
T1,T2,T3	Tests 1,2, 3
ASD	Attendance & Sessional Display
DH	Declared Holiday
LT	Lab Test
TA	Test attendance

Monday	13
Tuesday	13
Wednesday	12
Thursday	12
Friday	12
Total	62

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

TENTATIVE CALENDAR OF EVENTS: III ODD SEMESTER (2022-2023)

SESSION: OCT 2022 – FEB 2023

Week No.	Month	Day						Days	Activities	Department Activities Tentative Dates
		Mon	Tue	Wed	Thu	Fri	Sat			
1	OCT/ NOV	31*	1H	2	3	4 TA	5 DH	4	31* - Commencement of III Sem 1- Kannada Rajyotsava	Nov. 2nd - Industrial Visit for 5th sem
2	NOV	7	8	9	10	11H	12	5	11- Kanakadasa Jayanti 12- Tuesday Time Table	Nov. 8th Self Happines & Resilience Nov. 12th - FDP on "Patent Search and Analysis" for students & staff.
3	NOV	14	15	16	17	18	19 DH	5		Nov. 15 - IEEE Awareness for 1st year students Nov. 16th - Talk Under ASH/IEEE-WIE for 5th & 7th sem Nov.17th -Talk on Entrepreneurship development Skill Under ISTE
4	NOV	21	22	23	24	25	26 TA	6	26 - Wednesday Time Table	Nov. 24,25&26th -3 days "Hands-on Workshop on Embedded system Design using Raspberry pico" for students
5	NOV/ DEC	28 T1	29 T1	30 T1	1	2	3 DH	5		Nov. 28th & 29th AICTE Activity
6	DEC	5	6	7	8 LT1	9 LT1	10 LT1	6	10- Tuesday Time Table	Dec.8th & 9th - Workshop for 3rd & 5th sem students Under Garut Aerobotics Club Dec. 10th - Guest Lecture on "Addressing challenges in research publications" for students & Staff
7	DEC	12 * FFB1	13 BV	14 ASD	15	16	17 DH	5	12* - First Faculty Feed Back	Dec. 12th- Motivational Talk Under ISTE
8	DEC	19	20	21	22	23	24	6	24 - Wednesday Time Table	Dec. 24th- Indusrial Visit for 3rd sem
9	DEC	26	27	28	29	30	31 TA	6	31 - Monday Time Table	Dec. 30th- Carrier Guidance
10	JAN	2 T2	3 T2	4 T2	5	6	7 DH	5		Jan 5th - Miniproject Exhhition
11	JAN	9	10	11	12 BV	13 ASD	14 H	5	14- Makara Sankranthi	
12	JAN	16* FFB2	17	18	19	20	21 DH	5	16* - First Faculty Feed Back	
13	JAN	23	24	25	26 H	27	28	5	26- Republic Day 28- Wednesday Time Table	
14	JAN /FEB	30	31	1 TA	2 T3	3 T3	4 DH	5		
15	FEB	6 T3	7	8 LT2	9 LT2	10 LT2	11*	6	11- Thursday Time Table 11* - Last Working day	
Total No of Working Days : 79										

Total Number of working days (Excluding holidays and Tests)=64

H	Holiday
BV	Blue Book Verification
T1,T2, T3	Tests 1,2, 3
ASD	Attendance & Sessional Display
DH	Declared Holiday
LT	Lab Test
TA	Test attendance

Monday	**13**
Tuesday	**13**
Wednesday	**13**
Thursday	**13**
Friday	**12**
Total	**64**

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

TENTATIVE CALENDAR OF EVENTS: V ODD SEMESTER (2022-2023)

SESSION: OCT 2022 – JAN 2023

Week No.	Month	Day						Days	Activities	Department Activities Tentative Dates
		Mon	Tue	Wed	Thu	Fri	Sat			
1	OCT	10*	11	12	13	14	15	6	10* - Commencement of V Sem 15- Friday Time Table	Oct. 10th & 11th Workshop Under Anthariksh Oct 15th - IEEE day
2	OCT	17	18	19	20	21	22 DH	5		Oct21st - Industrial Visit for 7th sem
3	OCT	24 H	25	26 H	27	28	29	4	24-Naraka Chaturdashi 26- Balipadyami Deepavalli 29- Wednesday Time Table	
4	OCT/ NOV	31	1H	2	3	4	5 DH	4	1- Kannada Rajyotsava	Nov. 2nd - Industrial Visit for 5th sem
5	NOV	7	8	9	10	11H	12 TA	5	11- Kanakadasa Jayanti 12- Tuesday Time Table	Nov. 8th Self Happines & Resilience Nov. 12th - FDP on "Patent Search and Analysis" for students & staff.
6	NOV	14 T1	15 T1	16 T1	17	18	19 DH	5		Nov. 15 - IEEE Awareness for 1st year students Nov. 16th - Talk Under ASH/IEEE-WIE for 5th & 7th sem Nov.17th -Talk on Entrepreneurship development Skill Under ISTE
7	NOV	21	22	23 LT1	24 LT1	25 LT1	26	6	26 - Wednesday Time Table	Nov. 24,25&26th -3 days "Hands-on Workshop on Embedded system Design using Raspberry pico" for students
8	NOV/ DEC	28 * FFB1	29 BV	30 ASD	1	2	3 DH	5	28* - First Faculty Feed Back	Nov. 28th & 29th AICTE Activity
9	DEC	5	6	7	8	9	10	6	10- Tuesday Time Table	Dec.8th & 9th - Workshop for 3rd & 5th sem students Under Garut Aerobotics Club Dec. 10th - Guest Lecture on "Addressing challenges in research publications" for students & Staff
10	DEC	12	13	14	15	16 TA	17 DH	5		Dec. 12th- Motivational Talk Under ISTE
11	DEC	19 T2	20 T2	21 T2	22	23	24	6	24 - Wednesday Time Table	Dec. 24th- Indusrial Visit for 3rd sem
12	DEC	26	27	28	29 * FFB2	30 BV	31 ASD	6	29* -Second Faculty Feed Back 31 - Monday Time Table	Dec. 30th- Carrier Guidance
13	JAN	2	3	4	5	6	7 DH	5		Jan 5th - Miniproject Exbhition
14	JAN	9	10	11	12	13	14 H	5	14- Makara Sankranti	
15	JAN	16	17 TA	18 T3	19 T3	20 T3	21 DH	5		
16	JAN	23 LT2	24 LT2	25 LT2	26 H	27*		4	26- Republic Day 27* - Last Working day	
Total No of Working Days : 82										

Total Number of working days (Excluding holidays and Tests)=67

H	Holiday
BV	Blue Book Verification
T1,T2, T3	Tests 1,2, 3
ASD	Attendance & Sessional Display
DH	Declared Holiday
LT	Lab Test
TA	Test attendance

Monday	13
Tuesday	13
Wednesday	13
Thursday	14
Friday	14
Total	67

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

TENTATIVE CALENDAR OF EVENTS: VII ODD SEMESTER (2022-2023)

SESSION: SEP 2022 – DEC 2022

Week No.	Month	Day						Days	Activities	Department Activities Tentative Dates
		Mon	Tue	Wed	Thu	Fri	Sat			
1	SEP	19*	20	21	22	23	24 DH	5	19*-Commencement of VII Semester	
2	SEP/ OCT	26	27	28	29	30	1	6	1 - Wednesday Time Table	Sep 26th to 30th - FDP Under IEEE, IEI, IETE & ISTE
3	OCT	3	4H	5H	6	7	8 DH	3	4-Ayudha Pooja 5- Vijaya Dasami	
4	OCT	10	11	12	13	14	15 TA	6	15-Friday Time Table	Oct. 10th &11th Workshop Under Anthariksh Oct 15th - IEEE day
5	OCT	17 T1	18 T1	19 T1	20	21	22 DH	5		Oct21st - Industrial Visit for 7th sem
6	OCT	24 H	25	26 H	27 LT1	28 LT1	29 LT1	4	24-Naraka Chaturdashi 26- Balipadyami Deepavalli	
7	OCT/ NOV	31	1H	2	3* FFB1	4 BV	5 DH	4	1- Kannada Rajyotsava 3* - First Faculty Feed Back	Nov. 2nd - Industrial Visit for 5th sem
8	NOV	7 ASD	8	9	10	11H	12	5	11- Kanakadasa Jayanti 12- Tuesday Time Table	Nov. 8th Self Happines & Resilience Nov. 12th - FDP on "Patent Search and Analysis" for students & staff.
9	NOV	14	15	16	17	18 TA	19 DH	5		Nov. 15 - IEEE Awareness for 1st year students Nov. 16th - Talk Under ASH/IEEE-WIE for 5th & 7th sem Nov.17th -Talk on Entrepreneurship development Skill Under ISTE
10	NOV	21 T2	22 T2	23 T2	24	25	26	6	26 - Wednesday Time Table	Nov. 24,25&26th -3 days "Hands-on Workshop on Embedded system Design using Raspberry pico" for students
11	NOV/ DEC	28 * FFB2	29	30 BV	1	2 ASD	3 DH	5	28* -Second Faculty Feed Back	Nov. 28th & 29th AICTE Activity
12	DEC	5	6	7	8	9	10	6	10- Tuesday Time Table	Dec.8th & 9th - Workshop for 3rd & 5th sem students Under Garut AeroModeling Club Dec. 10th - Guest Lecture on "Addressing challenges in research publications" for students & Staff
13	DEC	12	13	14	15	16	17 DH	5		Dec. 12th- Motivational Talk Under ISTE
14	DEC	19	20	21 TA	22 T3	23 T3	24 T3	6		Dec. 24th- Indusrial Visit for 3rd sem
15	DEC	26	27	28 LT2	29 LT2	30 LT2	31*	6	31-Monday Time Table 31 - Last Working day	Dec. 30th- Carrier Guidance
Total No of Working Days : 77										

Total Number of working days (Excluding holidays and Tests)=62

H	Holiday
BV	Blue Book Verification
T1,T2, T3	Tests 1,2, 3
ASD	Attendance & Sessional Display
DH	Declared Holiday
LT	Lab Test
TA	Test attendance

Monday	13
Tuesday	13
Wednesday	12
Thursday	12
Friday	12
Total	62

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K. S. INSTITUTE OF TECHNOLOGY, BANGALORE

VII SEM (2018 SCHEME)

I SESSIONAL TEST TIME TABLE (2022-2023)

DATE: 11-10-2022

DATE	TIME	COMPUTER SCIENCE AND ENGG	ELECTRONICS AND COMMUNICATION ENGG	ELECTRONICS AND TELECOMMUNICATION ENGG	MECHANICAL ENGG
27-10-2022 THURSDAY	9.30 AM TO 11.00 AM	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING (18CS71)	COMPUTER NETWORKS (18EC71)	OPTICAL COMMUNICATION (18TE71)	CONTROL ENGINEERING (18ME71)
	2.00 PM TO 3.30 PM	BIG DATA ANALYTICS (18CS72)	VLSI DESIGN (18EC72)	WIRELESS COMMUNICATION (18TE72)	COMPUTER AIDED DESIGN & MANUFACTURING (18ME72)
28-10-2022 FRIDAY	9.30 AM TO 11.00 AM	USER INTERFACE DESIGN (18CS734)	SATELLITE COMMUNICATION (18EC732)	SATELLITE COMMUNICATION (18EC732)	TOTAL QUALITY MANAGEMENT (18ME734)
	2.00 PM TO 3.30 PM	CRYPTOGRAPHY (18CS744)	CRYPTOGRAPHY (18EC744)	CRYPTOGRAPHY (18EC744)	ADDITIVE MANUFACTURING (18ME741)
29-10-2022 SATURDAY	9.30 AM TO 11.00 AM	ENERGY AND ENVIRONMENT (18ME751)	ENERGY AND ENVIRONMENT (18ME751)	ENERGY AND ENVIRONMENT (18ME751)	PYTHON APPLICATION PROGRAMMING (18CS752)
	2.00 PM TO 3.30 PM	----	----	----	----

NOTE: All the students are strictly informed to wear LAB uniforms, College ID Card is compulsory during the test.

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VII SEM I SESSIONAL TEST INVIGILATION DUTY (2022-2023)

Date	Timings	201	203	204	205	206	207	208	209
27-10-2022 THURSDAY	9:30 am to 11:00 am	BK (CSE)	NM (ME)	KG (CSE)	RGL (ME)	PR (CSE)	PA (ECE)	PS (ECE)	AKG (ECE)
	2:00 pm to 3:30 pm	PR (CSE)	MBR (ME)	KMS (CSE)	PHS. (CSE)	SST (ECE)	SB (ECE)	LK (CSE)	PS (ECE)
28-10-2022 FRIDAY	9:30 am to 11:00 am	KMS (CSE)	AKG (ECE)	SB (ECE)	PKN (CSE)	MBR (ME)	PA PS (ECE)	SST (ECE)	LK GR (CSE)
	2:00 pm to 3:30 pm	BK (CSE)	SST (ECE)	PKN (CSE)	PS PA (ECE)	RGL (ME)	GR LK (CSE)	NM (ME)	AKG (ECE)
29-10-2022 SATURDAY	9:30 am to 11:00 am	LK (CSE)	PA (ECE)	GR (CSE)	MBR (ME)	PHS (CSE)	AKG (ECE)	RGL (ME)	KG (CSE)

20/10/22
ACADEMIC-INCHARGE

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Mr. Krishna Gudi	KG	Dr. Surekha	SB
Mr. Prashanth HS	PHS	Mr. Praveen	PA
Mrs. Beena K	BK	Mr. Saleem S Tevaramani	SST
Mrs. Geetha R	GR	Mr. Aswini Kumar	AKG
Mrs. Pallavi K N	PKN	Mrs. Pooja S	PS
Mrs. Kavya M S	KMS	Mr. Nagabhushana M	NM
Mrs. Pallavi R	PR	Mr. Manjunath B R	MBR
Mr. Laxmikantha K	LK	Mr. Rajesh G L	RGL

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VII SEM 2018 SCHEME

FIRST INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM No: 201

BLACK BOARD

VII 'A' CS		VII 'A' EC
1KS19CS001		1KS19EC001
1KS19CS002		1KS19EC002
1KS19CS003		1KS19EC003
1KS19CS004		1KS19EC004
1KS19CS005		1KS19EC005
1KS19CS006		1KS19EC006

VII 'A' CS		VII 'A' EC
1KS19CS007		1KS19EC007
1KS19CS009		1KS19EC008
1KS19CS010		1KS19EC009
1KS19CS011		1KS19EC010
1KS19CS012		1KS19EC011
1KS19CS014		1KS19EC012

VII 'A' CS		VII 'A' EC
1KS19CS015		1KS19EC014
1KS19CS016		1KS19EC015
1KS19CS017		1KS19EC016
1KS19CS018		1KS19EC017
1KS19CS019		1KS19EC018
1KS19CS020		1KS19EC019

VII CS 'A ' SEC Total = 18

VII EC 'A ' SEC Total = 18

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VII SEM 2018 SCHEME

FIRST INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM No: 203

BLACK BOARD

VII 'A' CS		VII 'A' EC
1KS19CS021		1KS19EC020
1KS19CS022		1KS19EC021
1KS19CS023		1KS19EC022
1KS19CS024		1KS19EC023
1KS19CS025		1KS19EC024
1KS19CS026		1KS19EC025

VII 'A' CS		VII 'A' EC
1KS19CS028		1KS19EC027
1KS19CS029		1KS19EC028
1KS19CS030		1KS19EC029
1KS19CS031		1KS19EC030
1KS19CS032		1KS19EC031
1KS19CS033		1KS19EC032

VII 'A' CS		VII 'A' ME
1KS19CS034		1KS19ME001
1KS19CS035		1KS19ME002
1KS19CS036		1KS19ME003
1KS19CS038		1KS19ME004
1KS19CS039		1KS19ME005
1KS19CS040		1KS19ME008

VII CS 'A ' SEC Total = 18

VII EC 'A ' SEC Total = 12

VII ME 'A ' SEC Total = 06

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VII SEM 2018 SCHEME

FIRST INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM No: 204

BLACK BOARD

VII 'A' CS		VII 'A' EC
1KS19CS041		1KS19EC033
1KS19CS042		1KS19EC035
1KS19CS043		1KS19EC036
1KS19CS044		1KS19EC037
1KS19CS045		1KS19EC038
1KS19CS046		1KS19EC039

VII 'A' CS		VII 'A' EC
1KS19CS047		1KS19EC040
1KS19CS048		1KS19EC041
1KS19CS049		1KS19EC042
1KS19CS050		1KS19EC043
1KS19CS051		1KS19EC044
1KS19CS052		1KS19EC045

VII 'A' CS		VII 'A' ME
1KS19CS053		1KS19ME009
1KS19CS054		1KS19ME010
1KS19CS055		1KS19ME011
1KS19CS056		1KS19ME013
1KS19CS057		1KS19ME014
1KS19CS058		1KS19ME015

VII CS 'A ' SEC Total = 18

VII EC 'A ' SEC Total = 12

VII ME 'A ' SEC Total = 06

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VII SEM 2018 SCHEME

FIRST INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM No: 205

BLACK BOARD

VII 'A & B' CS		VII 'A' EC
1KS18CS011		1KS19EC046
1KS19CS116		1KS19EC047
1KS20CS400		1KS19EC048
1KS20CS404		1KS19EC049
1KS20CS402		1KS19EC050
1KS19CS059		1KS19EC051

VII 'B' CS		VII 'A' EC
1KS19CS060		1KS19EC052
1KS19CS061		1KS19EC053
1KS19CS062		1KS19EC054
1KS19CS063		1KS19EC055
1KS19CS064		1KS19EC056
1KS19CS065		1KS19EC057

VII 'B' CS		VII 'A' ME
1KS19CS066		1KS19ME016
1KS19CS067		1KS19ME017
1KS19CS068		1KS19ME018
1KS19CS069		1KS19ME019
1KS19CS070		1KS19ME020
1KS19CS071		1KS19ME021

VII CS 'A ' SEC Total = 05 **VII CS 'B' SEC TOTAL = 13**

VII EC 'A ' SEC Total = 12

VII ME 'A ' SEC Total = 06

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K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

VII SEM 2018 SCHEME

FIRST INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM NO: 206

BLACK BOARD

VII 'B' CS		VII 'A' EC
1KS19CS072		1KS19EC058
1KS19CS073		1KS19EC059
1KS19CS074		1KS19EC061
1KS19CS075		1KS19EC062
1KS19CS076		1KS19EC063
1KS19CS077		1KS19EC064

VII 'B' CS		VII 'A & B' EC
1KS19CS078		1KS19EC065
1KS19CS079		1KS19EC066
1KS19CS080		1KS19EC067
1KS19CS081		1KS19EC068
1KS19CS082		1KS19EC069
1KS19CS083		1KS19EC070

VII 'A' ME		VII 'B' EC
1KS19ME022		1KS19EC071
1KS19ME023		1KS19EC073
1KS19ME024		1KS19EC074
1KS19ME025		1KS19EC075
1KS19ME026		1KS19EC076
1KS19ME027		1KS19EC077

VII CS 'B ' SEC Total = 12

VII EC 'A ' SEC Total = 08

VII ME 'A ' SEC Total = 06

VII EC 'B' SEC TOTAL = 10

ACADEMIC COORDINATOR
Head of the Department
Dept. of Mechanical Engg.
K.S. Institute of Technology
Bengaluru - 560 109.

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K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

VII SEM 2018 SCHEME

FIRST INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM NO: 207

BLACK BOARD

VII 'B' CS		VII 'B' EC
1KS19CS084		1KS19EC078
1KS19CS085		1KS19EC079
1KS19CS086		1KS19EC081
1KS19CS087		1KS19EC082
1KS19CS088		1KS19EC083
1KS19CS089		1KS19EC084

VII 'B' CS		VII 'B' EC
1KS19CS090		1KS19EC085
1KS19CS091		1KS19EC086
1KS19CS092		1KS19EC087
1KS19CS093		1KS19EC088
1KS19CS094		1KS19EC089
1KS19CS096		1KS19EC090

VII 'A' ME		VII 'B' EC
1KS19ME028		1KS19EC092
1KS19ME029		1KS19EC093
1KS19ME030		1KS19EC094
1KS19ME032		1KS19EC095
1KS19ME033		1KS19EC096
1KS19ME034		1KS19EC097

VII CS 'B ' SEC Total = 12

VII EC 'B ' SEC Total = 18

VII ME 'A ' SEC Total = 06

ACADEMIC COORDINATOR
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K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

VII SEM 2018 SCHEME

FIRST INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM NO: 208

BLACK BOARD

VII 'B' CS		VII 'B' EC
1KS19CS097		1KS19EC098
1KS19CS098		1KS19EC099
1KS19CS099		1KS19EC100
1KS19CS100		1KS19EC101
1KS19CS101		1KS19EC102
1KS19CS102		1KS19EC103

VII 'B' CS		VII 'B' EC
1KS19CS103		1KS19EC104
1KS19CS104		1KS19EC105
1KS19CS105		1KS19EC106
1KS19CS106		1KS19EC107
1KS19CS107		1KS19EC108
1KS19CS108		1KS18EC089

VII 'A' ME		VII 'B' EC & VII TCE
1KS19ME035		1KS20EC400
1KS19ME036		1KS20EC401
1KS19ME037		1KS20EC402
1KS19ME039		1KS18TE005
1KS19ME040		1KS19ET002
1KS18ME001		1KS19ET003

VII CS 'B ' SEC Total = 12

VII EC 'B ' SEC Total = 18

VII ME 'A ' SEC Total = 06

ACADEMIC COORDINATOR
Head of the Department
Dept. of Mechanical Engg
K.S. Institute of Technology
Bengaluru - 560 109.

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BENGALURU - 560 109

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

Department of Electronics and Communication Engineering

Attendance of VII 'A' for First Internal Test (2022-2023)

Room No: 201

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC001		AB			
2	1KS19EC002					
3	1KS19EC003					
4	1KS19EC004					
5	1KS19EC005					
6	1KS19EC006					
7	1KS19EC007			Absent		AB
8	1KS19EC008					
9	1KS19EC009		AB			
10	1KS19EC010	AB				
11	1KS19EC011	AB	AB	Archana. M	Archana. M	Archana M
12	1KS19EC012					
13	1KS19EC014					
14	1KS19EC015					
15	1KS19EC016					
16	1KS19EC017					AB
17	1KS19EC018		AB			
18	1KS19EC019		AB			
DATE:		27/10/22	27/10/22	28/10/22	28/10/22	28/10/22
NO. OF STUDENTS PRESENT		16	13	17	18	16
NO. OF STUDENTS ABSENT		2	05	01	0	02
NAME OF INVIGILATOR		Beena K	Pallavi P	Karya MS	Beena K	LK
SIGNATURE OF INVIGILATOR						

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

Department of Electronics and Communication Engineering

Attendance of VII 'A' for First Internal Test (2022-2023)

Room No: 203

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC020			AB		
2	1KS19EC021		AB			
3	1KS19EC022			AB		
4	1KS19EC023	AB	AB			
5	1KS19EC024					
6	1KS19EC025					
7	1KS19EC027					
8	1KS19EC028					
9	1KS19EC029	AB	AB			← AB →
10	1KS19EC030			AB		
11	1KS19EC031		AB			
12	1KS19EC032					
DATE:		27/10/22	27/10/22	28/10/22	28/10/22	29/10/22
NO. OF STUDENTS PRESENT		10	08	09	12	11
NO. OF STUDENTS ABSENT		2	04	03	00	01
NAME OF INVIGILATOR				G. Ashwini Kumar		Praveen
SIGNATURE OF INVIGILATOR						

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109
Department of Electronics and Communication Engineering
Attendance of VII 'A' for First Internal Test (2022-2023)

Room No: 204

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC033					
2	1KS19EC035					
3	1KS19EC036					
4	1KS19EC037					
5	1KS19EC038		Absent			
6	1KS19EC039					
7	1KS19EC040					
8	1KS19EC041					
9	1KS19EC042		Absent			
10	1KS19EC043					
11	1KS19EC044	ABSENT				
12	1KS19EC045					
DATE:		27/10/22	27/10/22	28/10/22	28/10/22	29/10/22
NO. OF STUDENTS PRESENT		11	10	12	12	12
NO. OF STUDENTS ABSENT		01	02	00	-Nil-	-00-
NAME OF INVIGILATOR		Krishna Gud	Kavya MS	Dr B Sarekha	Pallavi KN	Geetha R
SIGNATURE OF INVIGILATOR						

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109
Department of Electronics and Communication Engineering
Attendance of VII 'A' for First Internal Test (2022-2023)

Room No: 205

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC046			AB		
2	1KS19EC047	AB	AB			
3	1KS19EC048					
4	1KS19EC049					
5	1KS19EC050					
6	1KS19EC051					
7	1KS19EC052				AB	AB
8	1KS19EC053					
9	1KS19EC054					
10	1KS19EC055					
11	1KS19EC056					
12	1KS19EC057	AB				
DATE:		27/10/2022	27/10/22	28/10/2022	28/10/22	24/10/22
NO. OF STUDENTS PRESENT		10	11	11	11	11
NO. OF STUDENTS ABSENT		02	01	01	01	01
NAME OF INVIGILATOR		RAJESHGL	Prashanth	Pallavi.KN	Praveen	Manjunath
SIGNATURE OF INVIGILATOR		27/10/22	27/10/22	28/10		

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109
Department of Electronics and Communication Engineering
Attendance of VII 'A & B' for First Internal Test (2022-2023)

Room No: 206

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATIO N (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC058	Badal A	AB	Badal A	Badal A	Badal A
2	1KS19EC059	[illegible]	AB	[illegible]	[illegible]	[illegible]
3	1KS19EC061	AB	AB	PSK	PSK	PSK
4	1KS19EC062	Praveens	Praveens	Praveens	Praveens	Praveens
5	1KS19EC063	AB	AB	AB	Pradi(A)	AB
6	1KS19EC064	Priya	Priya	Priya	Priya	AB
7	1KS19EC065	Rachkishl	Rachkishl	Rachkishl	Rachkishl	Rachkishl
8	1KS19EC066	Riyi	Riyi	Riyi	Riyi	Riyi
9	1KS19EC067	[illegible]	[illegible]	AB	[illegible]	AB
10	1KS19EC068	AB	AB	[illegible]	[illegible]	[illegible]
11	1KS19EC069	Rohan L R	Rohan L R	AB	Rohan L R	Rohan L R
12	1KS19EC070	S K Bharatesh	S K Bharatesh	S K Bharatesh	S K Bharatesh	S K Bharatesh
13	1KS19EC071	Salarish T J	Salarish T J	Salarish T J	Salarish T J	Salarish T J
14	1KS19EC073	Sahana S	Sahana S	Sahana S	Sahana S	Sahana S
15	1KS19EC074	AB	AB	AB	AB	AB
16	1KS19EC075	Samik	Samik	Samik	Samik	Samik
17	1KS19EC076	Sutejhleys	Sutejhleys	Sutejhleys	Sutejhleys	Sutejhleys
18	1KS19EC077	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
DATE:		27/10/22	27/10/22	27/10/22	28/10/2022	29/10/22
NO. OF STUDENTS PRESENT		14	12	14	17	14
NO. OF STUDENTS ABSENT		04	06	04	01	04
NAME OF INVIGILATOR		Pallavi P.	Saleem S Tenasammi	[illegible]	RAJESH GL	Prashanth H S
SIGNATURE OF INVIGILATOR		[illegible]	SSTH	Manjunath	[illegible] 28/10/22	[illegible]

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

Department of Electronics and Communication Engineering

Attendance of VII 'B' for First Internal Test (2022-2023)

Room No: 207

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC078	Bavitha	Bavitha	Bavitha	Bavitha	AB.
2	1KS19EC079	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	1KS19EC081	Shreyans	Shreyans	Shreyans	Shreyans	Shreyans
4	1KS19EC082	Shreyas B	Shreyas B.	Shreyas B.	Shreyas B.	Shreyas B
5	1KS19EC083	Shreyas	Shreyas	Shreyas	Shreyas	Shreyas
6	1KS19EC084	Shreyas	Shreyas	Shreyas	Shreyas	Shreyas
7	1KS19EC085	[illegible]	- AB -	← AB →	[illegible]	[illegible]
8	1KS19EC086	Sindhura MN	Sindhura MN	Sindhura MN	Sindhura MN	AB
9	1KS19EC087	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	1KS19EC088	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11	1KS19EC089	Sowmya	Sowmya	Sowmya	Sowmya	Sowmya
12	1KS19EC090	← AB →	- AB -	Suhas	Suhas	AB
13	1KS19EC092	Sanjana	Sanjana	Sanjana	Sanjana	Sanjana
14	1KS19EC093	Sushmitha S	Sushmitha S	Sushmitha S	Sushmitha S	AB
15	1KS19EC094	[illegible]	[illegible]	← AB →	[illegible]	[illegible]
16	1KS19EC095	← AB →	Swathi	Swathi	Swathi	AB.
17	1KS19EC096	Ruth	Ruth	Ruth	Ruth	Ruth
18	1KS19EC097	Tejashwini	Tejashwini	Tejashwini	Tejashwini	Tejashwini
DATE:		27/10/22	27/10/22	28/10/22	28/10/22	29/10/22
NO. OF STUDENTS PRESENT		16	16	16	18	13
NO. OF STUDENTS ABSENT		02	02	02	00	05
NAME OF INVIGILATOR		Praveen	Dr. B Suresh	Pooja S.	LK	G. Ashok Kumar
SIGNATURE OF INVIGILATOR		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

Department of Electronics and Communication Engineering

Attendance of VII 'B' for First Internal Test (2022-2023)

Room No: 208

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC098					
2	1KS19EC099	← AB →	← AB →	← AB →	— AB —	— AB —
3	1KS19EC100					
4	1KS19EC101					
5	1KS19EC102	← AB →				
6	1KS19EC103					
7	1KS19EC104	← AB →	← AB →			
8	1KS19EC105	← AB →	← AB →			
9	1KS19EC106					
10	1KS19EC107					
11	1KS19EC108	← AB →	← AB →			
12	1KS18EC089	← AB →	← AB →			— AB —
13	1KS20EC400		← AB →			
14	1KS20EC401	← AB →				— AB —
15	1KS20EC402	← AB →	← AB →			— AB —
DATE:		27/10/22	27/10/22	28/10/22	28/10/22	29/10/2022
NO. OF STUDENTS PRESENT		07	08	14	14	11
NO. OF STUDENTS ABSENT		08	07	01	01	04
NAME OF INVIGILATOR		PS	LK	SST		RAJESH GL
SIGNATURE OF INVIGILATOR						29/10

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

Department of Electronics and Telecommunication Engineering

Attendance of VII Sem for First Internal Test (2022-2023)

Room No: 208

SL.NO	REGISTER NO.	OPTICAL COMMUNICATION (18TE71)	WIRELESS COMMUNICATION (18TE72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS18TE005	Ankitha	Ankitha	Ankitha	Ankitha	Ankitha
2	1KS19ET002	Chaitra.C	Chaitra.C	Chaitra.C	Chaitra.C	Chaitra.C.
3	1KS19ET003	AB	← AB →	[illegible]	[illegible]	— AB —
DATE: 27/10/22		27/10/22	27/10/22	28/10/22	28/10/22	29/10/2022
NO. OF STUDENTS PRESENT		02	02	03	03	02
NO. OF STUDENTS ABSENT		01	01	00	00	01
NAME OF INVIGILATOR		PS	LK	SST	Th. Nagabhushanam	RAJESH GL
SIGNATURE OF INVIGILATOR		Shoja	[illegible]	SST	Th. Nagabhushanam	[illegible] 29/10/22

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

Department of Electronics and Telecommunication Engineering

Attendance of VII Sem for First Internal Test (2022-2023)

Room No: 209

SL.NO	REGISTER NO.	OPTICAL COMMUNICATION (18TE71)	WIRELESS COMMUNICATION (18TE72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19ET004					AB
2	1KS19ET005	AB				
3	1KS19ET006					
4	1KS19ET007					
5	1KS19ET008	AB	←AB→	←AB→	AB.	AB
6	1KS19ET009					AB
7	1KS19ET010					
8	1KS19ET011					
9	1KS19ET012	AB.	←AB→			AB
DATE:		27/10/22	27/10/22	28/10/22	28/10/22	29/10/22
NO. OF STUDENTS PRESENT		06	07	08	08	05
NO. OF STUDENTS ABSENT		03	02	01	01	04
NAME OF INVIGILATOR			PS			
SIGNATURE OF INVIGILATOR						

K.S. INSTITUTE OF TECHNOLOGY, BANGALORE - 560109
FIRST INTERNAL TEST QUESTION PAPER 2022 – 23 ODD SEMESTER

SET: A

USN										

Degree	:	**B. E**	**Semester**	:	**VII A& B**
Branch	:	**ECE**	**Course Code**	:	**18ME751**
Course Title	:	**Energy and Environment**	**Date**	:	**29-10-2022**
Duration	:	**90 Minutes**	**Max Marks**	:	**30**

Note: Answer ONE full question from each part.

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Q No.	Question	Marks	CO mapping	K-Level
	PART-A			
1(a)	**Interpret** World Energy Scenario with respect to production and consumption using relevant statistics.	12	CO1	K2
(b)	**Explain** primary energy demand in India by fuel with sector wise comparison.	6	CO1	K2
	OR			
2(a)	**Illustrate** how the following factors effects the energy development in India: • Energy prices and Affordability • Social and environmental aspects • Investments	12	CO1	K2
(b)	**Explain:** (i) The Rajiv Gandhi Grameena Vidyutikaran Yojana (RGGVY) (ii) Deen Dayal Upadhyana Grama Jyoti Yojana (DDUDJY) (iii) Energy Production in India - Coal (only)	6	CO1	K2
	PART-B			
3(a)	**Identify** and explain the factors relevant to energy pricing.	6	CO2	K3
(b)	**Calculate** the cost of generation per kWh for a power station having the following data: Installed capacity of the plant = 200 MW Capital cost = Rs 400 crores Rate of interest and depreciation = 12% Annual cost of fuel, salaries, and taxation = Rs 5 crores Load factor = 50%	6	CO2	K3
	OR			
4(a)	**Identify** the principles of energy management system	6	CO2	K3
(b)	Identify and explain 10 steps methodology for detailed Energy Audit.	6	CO2	K3

Course In charge | Module Coordinator | HOD ECE | Principal

K.S. INSTITUTE OF TECHNOLOGY, BANGALORE - 560109
FIRST INTERNAL TEST QUESTION PAPER 2022 – 23 ODD SEMESTER

SET: B

USN

Degree	: **B. E**		**Semester**	:	**VII A& B**
Branch	: **ECE**		**Course Code**	:	**18ME751**
Course Title	: **Energy and Environment**		**Date**	:	**29-10-2022**
Duration	: **90 Minutes**		**Max Marks**	:	**30**

Note: Answer ONE full question from each part.

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Q No.	Question	Marks	CO mapping	K-Level
	PART-A			
1(a)	**Summarize** with relevant statistics, the primary energy production and trade trend for India.	12	CO1	K2
(b)	**Compare** Energy and Power.	6	CO1	K2
	OR			
2(a)	**Illustrate** how economy, demographics, policies, and framework effects the energy development in India.	12	CO1	K2
(b)	**Summarize** the India's rural electrification programme relevant to modern energy access.	6	CO1	K2
	PART-B			
3(a)	**Identify** the need for energy audit, preliminary audit, and detailed audit.	6	CO2	K3
(b)	**Calculate** the cost of generation per kWh for a power station having the following data: Installed capacity of the plant = 200 MW Capital cost = Rs 400 crores Rate of interest and depreciation = 12% Annual cost of fuel, salaries, and taxation = Rs 5 crores Load factor = 60%	6	CO2	K3
	OR			
4(a)	**Identify** the need for energy demand estimation.	6	CO2	K3
(b)	Identify and explain various phases of energy audit methodology	6	CO2	K3

Course In charge | Module Coordinator | HOD ECE | Principal

K. S. INSTITUTE OF TECHNOLOGY, BANGALORE

VII SEM (2018 SCHEME)

II SESSIONAL TEST TIME TABLE (2022-2023)

DATE: 21-11-2022

DATE	TIME	COMPUTER SCIENCE AND ENGG	ELECTRONICS AND COMMUNICATION ENGG	ELECTRONICS AND TELECOMMUNICATION ENGG	MECHANICAL ENGG
28-11-2022 MONDAY	9.30 AM TO 11.00 AM	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING (18CS71)	COMPUTER NETWORKS (18EC71)	OPTICAL COMMUNICATION (18TE71)	CONTROL ENGINEERING (18ME71)
	2.00 PM TO 3.30 PM	BIG DATA ANALYTICS (18CS72)	VLSI DESIGN (18EC72)	WIRELESS COMMUNICATION (18TE72)	COMPUTER AIDED DESIGN & MANUFACTURING (18ME72)
29-11-2022 TUESDAY	9.30 AM TO 11.00 AM	USER INTERFACE DESIGN (18CS734)	SATELLITE COMMUNICATION (18EC732)	SATELLITE COMMUNICATION (18EC732)	TOTAL QUALITY MANAGEMENT (18ME734)
	2.00 PM TO 3.30 PM	CRYPTOGRAPHY (18CS744)	CRYPTOGRAPHY (18EC744)	CRYPTOGRAPHY (18EC744)	ADDITIVE MANUFACTURING (18ME741)
30-11-2022 WEDNESDAY	9.30 AM TO 11.00 AM	ENERGY AND ENVIRONMENT (18ME751)	ENERGY AND ENVIRONMENT (18ME751)	ENERGY AND ENVIRONMENT (18ME751)	PYTHON APPLICATION PROGRAMMING (18CS752)
	11.30 AM ONWARDS	REGULAR CLASSES / LABS WILL BE HELD			

NOTE: All the students are strictly informed to wear LAB uniforms, College ID Card is compulsory during the test.

21/11/22

ACADEMIC COORDINATOR

Head of the Department
Dept. of Mechanical Engg.
K.S. Institute of Technology
Bengaluru - 560 109.

21/11/22

PRINCIPAL

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BENGALURU - 560 109.

K. S. INSTITUTE OF TECHNOLOGY, BANGALORE - 109

VII SEMESTER SECOND SESSIONAL TEST INVIGILATION DUTY (2022-2023)

Date	Timings	201	203	204	205	206	207	208	209
28-11-2022 MONDAY	9:30 am to 11:00 am	PA (ECE)	HU (ME)	KG (CSE)	NM (ME)	KMS (CSE)	SST (ECE)	RGL (ME)	LK (CSE)
	2:00 pm to 3:30 pm	MBR (ME)	VM (CSE)	PA (ECE)	AKG (ECE)	PHS (CSE)	BK (CSE)	MN (BS)	MKS (CSE)
29-11-2022 TUESDAY	9:30 am to 11:00 am	MBR (ME)	ST (CSE)	PHS (CSE)	AKG (ECE)	SG (CSE)	NP (CSE)	PS (ECE)	CJ (ECE)
	2:00 pm to 3:30 pm	SD (CSE)	NV (BS)	NM (ME)	PR (CSE)	VD (ECE)	RGL (ME)	PS (ECE)	LK (CSE)
30-11-2022 WEDNESDAY	9:30 am to 11:00 am	AMV (BS)	PR (CSE)	BK (CSE)	GR (CSE)	MBR (ME)	NP (CSE)	SST (ECE)	SKS (ECE)

NOTE : BLUE BOOK & QUESTION PAPER WILL BE DISTRISUTED IN VLSI LAB OLD BUILDING 2RD FLOOR

Invigilators :

Dr. Vijayalaxmi M	VM	Mr. Harish U	HU
Mr. Sanjoy Das	SD	Mrs. Anuradha M V	AMV
Mr. Krishna Gudi	KG	Mrs. Nagabhushana M	NM
Mr. Prashanth HS	PHS	Mr. Rajesh G L	RGL
Mrs. Beena K	BK	Mr. Prashanth H S	PHS
Mr. Manoj Kumar S	MKS	Mr. Manjunath B R	MBR
Mrs. Geetha R	GR	Mr.Praveen.A	PA
Mrs. Kavya M S	KMS	Mr.Saleem.S.Tevaramani	SST
Mr. Somasekhar T	ST	Ms.Pooja.S	PS
Mrs. Supreetha Ganesh	SG	Mr.Ashwini Kumar	AKG
Mrs. Pallavi R	PR	Mr.Christo Jain	CJ
Mr. Laxmikantha K	LK	Mr.Sampath Kumar.S	SKS
Mrs. Namyapriya	NP	Ms.Vishalini Divakar	VD
Mr.Naveen.V	NV	Ms.Mamatha.N	MN

25/11/22

ACADEMIC COORDINATOR
Dept. of Mechanical Engg.

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K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

VII SEM 2018 SCHEME

SECOND INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM NO: 201

BLACK BOARD

VII 'B' CS		VII 'B' EC
1KS19CS097		1KS19EC098
1KS19CS098		1KS19EC099
1KS19CS099		1KS19EC100
1KS19CS100		1KS19EC101
1KS19CS101		1KS19EC102
1KS19CS102		1KS19EC103

VII 'B' CS		VII 'B' EC
1KS19CS103		1KS19EC104
1KS19CS104		1KS19EC105
1KS19CS105		1KS19EC106
1KS19CS106		1KS19EC107
1KS19CS107		1KS19EC108
1KS19CS108		1KS18EC089

VII 'A' ME		VII 'B' EC
1KS19ME035		1KS20EC400
1KS19ME036		1KS20EC401
1KS19ME037		1KS20EC402
1KS19ME039		
1KS19ME040		
1KS18ME001		

VII CS 'B ' SEC Total = 12

VII EC 'B ' SEC Total = 15

VII ME 'A ' SEC Total = 06

23/11/22

ACADEMIC COORDINATOR
Head of the Department
Dept. of Mechanical Engg.
K.S. Institute of Technology
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VII SEM 2018 SCHEME

SECOND INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM No: 204

BLACK BOARD

VII 'A' CS		VII 'A' EC
1KS19CS001		1KS19EC001
1KS19CS002		1KS19EC002
1KS19CS003		1KS19EC003
1KS19CS004		1KS19EC004
1KS19CS005		1KS19EC005
1KS19CS006		1KS19EC006

VII 'A' CS		VII 'A' EC
1KS19CS007		1KS19EC007
1KS19CS009		1KS19EC008
1KS19CS010		1KS19EC009
1KS19CS011		1KS19EC010
1KS19CS012		1KS19EC011
1KS19CS014		1KS19EC012

VII 'A' CS		VII 'A' EC
1KS19CS015		1KS19EC014
1KS19CS016		1KS19EC015
1KS19CS017		1KS19EC016
1KS19CS018		1KS19EC017
1KS19CS019		1KS19EC018
1KS19CS020		1KS19EC019

VII CS 'A ' SEC Total = 18

VII EC 'A ' SEC Total = 18

23/11/22

ACADEMIC COORDINATOR
Head of the Department
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VII SEM 2018 SCHEME

SECOND INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM NO: 205

BLACK BOARD

VII 'A' CS		VII 'A' EC
1KS19CS021		1KS19EC020
1KS19CS022		1KS19EC021
1KS19CS023		1KS19EC022
1KS19CS024		1KS19EC023
1KS19CS025		1KS19EC024
1KS19CS026		1KS19EC025

VII 'A' CS		VII 'A' EC
1KS19CS028		1KS19EC027
1KS19CS029		1KS19EC028
1KS19CS030		1KS19EC029
1KS19CS031		1KS19EC030
1KS19CS032		1KS19EC031
1KS19CS033		1KS19EC032

VII 'A' CS		VII 'A' ME
1KS19CS034		1KS19ME001
1KS19CS035		1KS19ME002
1KS19CS036		1KS19ME003
1KS19CS038		1KS19ME004
1KS19CS039		1KS19ME005
1KS19CS040		1KS19ME008

VII CS 'A ' SEC Total = 18

VII EC 'A ' SEC Total = 12

VII ME 'A ' SEC Total = 06

23/11/22

ACADEMIC COORDINATOR
Head of the Department
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VII SEM 2018 SCHEME

SECOND INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM NO: 206

BLACK BOARD

VII 'A' CS		VII 'A' EC
1KS19CS041		1KS19EC033
1KS19CS042		1KS19EC035
1KS19CS043		1KS19EC036
1KS19CS044		1KS19EC037
1KS19CS045		1KS19EC038
1KS19CS046		1KS19EC039

VII 'A' CS		VII 'A' EC
1KS19CS047		1KS19EC040
1KS19CS048		1KS19EC041
1KS19CS049		1KS19EC042
1KS19CS050		1KS19EC043
1KS19CS051		1KS19EC044
1KS19CS052		1KS19EC045

VII 'A' CS		VII 'A' ME
1KS19CS053		1KS19ME009
1KS19CS054		1KS19ME010
1KS19CS055		1KS19ME011
1KS19CS056		1KS19ME013
1KS19CS057		1KS19ME014
1KS19CS058		1KS19ME015

VII CS 'A ' SEC Total = 18

VII EC 'A ' SEC Total = 12

VII ME 'A ' SEC Total = 06

23/11/22

ACADEMIC COORDINATOR

Head of the Department
Dept. of Mechanical Engg
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VII SEM 2018 SCHEME

SECOND INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM No: 207

BLACK BOARD

VII 'A & B' CS		VII 'A' EC
1KS18CS011		1KS19EC046
1KS19CS116		1KS19EC047
1KS20CS400		1KS19EC048
1KS20CS404		1KS19EC049
1KS20CS402		1KS19EC050
1KS19CS059		1KS19EC051

VII 'B' CS		VII 'A' EC
1KS19CS060		1KS19EC052
1KS19CS061		1KS19EC053
1KS19CS062		1KS19EC054
1KS19CS063		1KS19EC055
1KS19CS064		1KS19EC056
1KS19CS065		1KS19EC057

VII 'B' CS		VII 'A' ME
1KS19CS066		1KS19ME016
1KS19CS067		1KS19ME017
1KS19CS068		1KS19ME018
1KS19CS069		1KS19ME019
1KS19CS070		1KS19ME020
1KS19CS071		1KS19ME021

VII CS 'A ' SEC Total = 05

VII EC 'A ' SEC Total = 12

VII ME 'A ' SEC Total = 06

VII CS 'B' SEC TOTAL = 13

23/11/22

ACADEMIC COORDINATOR
Head of the Department
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VII SEM 2018 SCHEME

SECOND INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM NO: 208

BLACK BOARD

VII 'B' CS		VII 'A' EC
1KS19CS072		1KS19EC058
1KS19CS073		1KS19EC059
1KS19CS074		1KS19EC061
1KS19CS075		1KS19EC062
1KS19CS076		1KS19EC063
1KS19CS077		1KS19EC064

VII 'B' CS		VII 'A & B' EC
1KS19CS078		1KS19EC065
1KS19CS079		1KS19EC066
1KS19CS080		1KS19EC067
1KS19CS081		1KS19EC068
1KS19CS082		1KS19EC069
1KS19CS083		1KS19EC070

VII 'A' ME		VII 'B' EC
1KS19ME022		1KS19EC071
1KS19ME023		1KS19EC073
1KS19ME024		1KS19EC074
1KS19ME025		1KS19EC075
1KS19ME026		1KS19EC076
1KS19ME027		1KS19EC077

VII CS 'B ' SEC Total = 12

VII EC 'A ' SEC Total = 08 **VII EC 'B' SEC TOTAL = 10**

VII ME 'A ' SEC Total = 06

ACADEMIC COORDINATOR

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VII SEM 2018 SCHEME

SECOND INTERNAL TEST SEATING ARRANGEMENT (ODD SEMESTER - 2022-2023)

ROOM No: 209

BLACK BOARD

VII 'B' CS		VII 'B' EC
1KS19CS084		1KS19EC078
1KS19CS085		1KS19EC079
1KS19CS086		1KS19EC081
1KS19CS087		1KS19EC082
1KS19CS088		1KS19EC083
1KS19CS089		1KS19EC084

VII 'B' CS		VII 'B' EC
1KS19CS090		1KS19EC085
1KS19CS091		1KS19EC086
1KS19CS092		1KS19EC087
1KS19CS093		1KS19EC088
1KS19CS094		1KS19EC089
1KS19CS096		1KS19EC090

VII 'A' ME		VII 'B' EC
1KS19ME028		1KS19EC092
1KS19ME029		1KS19EC093
1KS19ME030		1KS19EC094
1KS19ME032		1KS19EC095
1KS19ME033		1KS19EC096
1KS19ME034		1KS19EC097

VII CS 'B ' SEC Total = 12

VII EC 'B ' SEC Total = 18

VII ME 'A ' SEC Total = 06

23/11/22

ACADEMIC COORDINATOR

Head of the Department
Dept. of Mechanical Engg
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K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

Department of Electronics and Communication Engineering

Attendance of VII 'A' for Second Internal Test (2022-2023)

Room No: 204

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC001	A	Arif A	AB	Arif A	Arif A
2	1KS19EC002	A	←AB→	AB	– AB –	[illegible]
3	1KS19EC003	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Aishwarya
4	1KS19EC004	Aishl	Aishl	Aishl	Aishl	Aishl
5	1KS19EC005	A	←AB→	AB	– AB –	[illegible]
6	1KS19EC006	Akshith	Akshith	Akshith	Akshith	Akshith
7	1KS19EC007	Amrutha	Amrutha	Amrutha	Amrutha	Amrutha
8	1KS19EC008	Amulya	Amulya.	Amulya.	Amulya.	Amulya
9	1KS19EC009	A	Anitha	Anitha	– AB –	Anitha
10	1KS19EC010	Anjali	Anjali	AB	Anjali	Anjali
11	1KS19EC011	Archana M	Archana M	AB	– AB –	Archana M
12	1KS19EC012	Ash	Ash	Ash	Ash	Ash
13	1KS19EC014	A	←AB→	AB	Bhavya	Bhavya
14	1KS19EC015	chaitra	chaitra	AB	– AB –	chaitra
15	1KS19EC016	Chandan Raj	Chandan Raj	Chandan Raj	Chandan Raj	Chandan Raj
16	1KS19EC017	A	←AB→	AB	– AB –	[illegible]
17	1KS19EC018	A	[illegible]	AB	[illegible]	[illegible]
18	1KS19EC019	A	←AB→	AB	– AB –	←AB→
DATE:		28/11/22	28/11/22	29/11/22	29/11/22	30/11/22
NO. OF STUDENTS PRESENT		10	13	08	11	17
NO. OF STUDENTS ABSENT		08	05	10	7	1
NAME OF INVIGILATOR		Krishna Gadi	Praveen.A	Prashanthi S	T. Naveen Kumar	Beena.K
SIGNATURE OF INVIGILATOR		[signature]	[signature]	[signature]	[signature]	[signature]

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109
Department of Electronics and Communication Engineering
Attendance of VII 'A' for Second Internal Test (2022-2023)

Room No: 205

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC020	-AB-			-AB-	
2	1KS19EC021				-AB-	
3	1KS19EC022				-AB-	
4	1KS19EC023	-AB-			-AB-	
5	1KS19EC024					
6	1KS19EC025					
7	1KS19EC027	-AB-	-AB-	-AB-	-AB-	
8	1KS19EC028					
9	1KS19EC029	-AB-	-AB-	-AB-		
10	1KS19EC030	-AB-				
11	1KS19EC031	-AB-				
12	1KS19EC032					
DATE:		28/11/2022	28/11/22	29/4/22	29/4/22	30/11/22
NO. OF STUDENTS PRESENT		6	11	10	07	12
NO. OF STUDENTS ABSENT		6	1	2	05	0
NAME OF INVIGILATOR			Surya.S.		Pallavi R	Geetha.R
SIGNATURE OF INVIGILATOR						

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109
Department of Electronics and Communication Engineering
Attendance of VII 'A' for Second Internal Test (2022-2023)

Room No: 206

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC033					
2	1KS19EC035					
3	1KS19EC036					
4	1KS19EC037					
5	1KS19EC038	AB		AB	AB	AB
6	1KS19EC039				AB	
7	1KS19EC040					
8	1KS19EC041				AB	
9	1KS19EC042					
10	1KS19EC043					
11	1KS19EC044					
12	1KS19EC045					
DATE:		28/11/2022	28/11/22	29/11/22	29/11/22	3/11/22
NO. OF STUDENTS -PRESENT		11	11	10	09	11
NO. OF STUDENTS ABSENT		01	00	01	03	01
NAME OF INVIGILATOR		PALLAVI K	Prashantha HS	Supratha	Pooja S.	
SIGNATURE OF INVIGILATOR						

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109
Department of Electronics and Communication Engineering
Attendance of VII 'A' for Second Internal Test (2022-2023)

Room No: 207

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC046				AB	Absent
2	1KS19EC047					
3	1KS19EC048	AB	Absent	Absent	AB	Absent
4	1KS19EC049					
5	1KS19EC050	AB	Absent	Absent	AB	
6	1KS19EC051					
7	1KS19EC052	AB	Absent			
8	1KS19EC053					Absent
9	1KS19EC054					
10	1KS19EC055					
11	1KS19EC056					
12	1KS19EC057				AB	
DATE:		28/11/22	28/11/22	29/11/22	29/11/22	30/11/22
NO. OF STUDENTS PRESENT		09	09	10	08	09
NO. OF STUDENTS ABSENT		03	03	02	04	03
NAME OF INVIGILATOR		Saleem S. Tevatmal	Nanyapriya	Nanyapriya	Ranganath N	Nanyapriya
SIGNATURE OF INVIGILATOR		SST				

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

Department of Electronics and Communication Engineering

Attendance of VII 'A & B' for Second Internal Test (2022-2023)

Room No: 208

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC058	Prashanth A	Prashanth A	Prashanth A	Prashanth A	Prashanth A
2	1KS19EC059	Abhishek	Abhishek	Abhishek	Abhishek	Abhishek
3	1KS19EC061	AB	AB	AB	AB	RSK
4	1KS19EC062	Praveena	Praveena	Praveena	Praveena	Praveena
5	1KS19EC063	AB	AB	AB	Pradeep	Pradeep
6	1KS19EC064	Priya	Priya	Priya	Priya	Priya
7	1KS19EC065	AB	Rakshith	AB	Rakshith	AB
8	1KS19EC066	Rishi	Rishi	Rishi	Rishi	Rishi
9	1KS19EC067	Rut	Rut	Rut	Rut	AB
10	1KS19EC068	R	R	R	R	R
11	1KS19EC069	Rohan K R	Rohan K R	Rohan K R	AB	Rohan K R
12	1KS19EC070	S K Rakesh	S K Rakesh	S K Rakesh	S K Rakesh	S K Rakesh
13	1KS19EC071	AB	AB	Sahanish T S	Sahanish T S	Sahanish T S
14	1KS19EC073	Sahana S	Sahana S	Sahana S	AB	Sahana S
15	1KS19EC074	Saipriya S	Saipriya	Saipriya	Saipriya S	Saipriya
16	1KS19EC075	AB	AB	AB	Samuel	AB
17	1KS19EC076	Santosh Heyal	Santosh Heyal	Santosh Heyal	Santosh Heyal	Santosh Heyal
18	1KS19EC077					
DATE:		28/11/2022	28/11/2022	29/11/2022	29/11/22	30/11/22
NO. OF STUDENTS PRESENT		13	14	14	15	15
NO. OF STUDENTS ABSENT		05	04	04	03	03
NAME OF INVIGILATOR		RAJESHA	MAMATHA.N	Pooja S.	VD	Saleem S. Tevaramani
SIGNATURE OF INVIGILATOR		29/11/22	Mamatha. 29/11	Pooja 29/11		SSTy

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109
Department of Electronics and Communication Engineering
Attendance of VII 'B' for Second Internal Test (2022-2023)

Room No: 209

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC078	Baitha	Baitha	Baitha	Baitha	Baitha
2	1KS19EC079	AB	AB	AB	Absent	AB
3	1KS19EC081	Shreyas	Shreyas	AB	Shreyas	AB
4	1KS19EC082	Shreyas B.	Shreyas B.	Shreyas B.	Shreyas B.	Shreyas B
5	1KS19EC083	AB	Shreyas	AB	Shreyas	AB
6	1KS19EC084	AB	AB	Shreyas VB	Shreyas	Shreyas
7	1KS19EC085	Iftul	Iftul	Iftul	Iftul	Iftul
8	1KS19EC086	Sinchana MN	Sinchana MN	Sinchana MN	Sinchana MN	Sinchana MN
9	1KS19EC087	AB	Srinivas	Srinivas	Srinivas	Srinivas
10	1KS19EC088	AB	AB	AB	Absent	AB
11	1KS19EC089	AB	Sairam K	Sairam KG	Sairam K	Sairam K
12	1KS19EC090	Suhas	Suhas	AB	Suhas	Suhas
13	1KS19EC092	Sumukha	Sumukha	Sumukha	Sumukha	AB
14	1KS19EC093	Sushmitha S	Sushmitha S	Sushmitha S	Sushmitha S	Sushmitha S
15	1KS19EC094	AB				
16	1KS19EC095	Swathi	Swathi	Swathi	Swathi	Swathi
17	1KS19EC096	Ruth	Ruth	Ruth	Ruth	Ruth
18	1KS19EC097	Tejashwini	Tejashwini	Tejashwini	Tejashwini	Tejashwini
DATE:		28/11/22	28/11/22	29/11/22	29/11/22	30/11/22
NO. OF STUDENTS PRESENT		11	15	13	16	13
NO. OF STUDENTS ABSENT		07	03	05	02	05
NAME OF INVIGILATOR		Beena.K	MKS	Chandra	Nanjapriya	Sampath
SIGNATURE OF INVIGILATOR						

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109
Department of Electronics and Communication Engineering
Attendance of VII 'B' for Second Internal Test (2022-2023)

Room No: 201

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC098	← AB →		AB		AB
2	1KS19EC099				ABSENT	
3	1KS19EC100					
4	1KS19EC101					
5	1KS19EC102					
6	1KS19EC103					
7	1KS19EC104	← AB →		AB	ABSENT	
8	1KS19EC105			AB		
9	1KS19EC106					
10	1KS19EC107	← AB →				
11	1KS19EC108	← AB →				
12	1KS18EC089				ABSENT	
13	1KS20EC400	← AB →		AB	ABSENT	
14	1KS20EC401			AB		
15	1KS20EC402					
DATE:		28/11/22	28/11/22	29/11/22	29/11/22	30/11/22
NO. OF STUDENTS PRESENT		10	12	10	11	12
NO. OF STUDENTS ABSENT		05	03	05	04	02
NAME OF INVIGILATOR		Praveen.A			SANJAY DAS	
SIGNATURE OF INVIGILATOR						

SET A

K.S. INSTITUTE OF TECHNOLOGY, BANGALORE – 560109

SECOND SESSIONAL TEST QUESTION PAPER 2022 – 23 ODD SEMESTER

USN | | | | | | | | | | |

Degree	: **B.E**	**Semester:**	**VII**
Branch	: **ECE**	**Course Code:**	**18ME751**
Course Title	: **Energy and Environment**	**Date:**	**30/11/2022**
Duration	: **90 Minutes**	**Max Marks:**	**30**

Note: Answer **ONE full** question from each part.

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Q No.	Question	Marks	CO mapping	K-Level
	PART-A			
1(a)	**Explain** Environment, its scope and the need for public awareness	6	CO3	K2
(b)	**Interpret** how water cycle is utilized in the ecosystem.	6	CO3	K2
(c)	**Illustrate** grassland ecosystem. What are its types? How conservation of grassland can be made.	6	CO3	K2
	OR			
2(a)	**Explain** the food chain process. Write a short note on food web.	6	CO3	K2
(b)	**Interpret** the utilization of carbon in ecosystem	6	CO3	K2
(c)	**Illustrate** aquatic ecosystem and its types.	6	CO3	K2
	PART-B			
3(a)	**Make use of** the packed bed storage and storage wall technology to explain thermal energy storage.	6	CO2	K3
(b)	**Summarize** the effects of air pollution on living organisms	6	CO4	K2
4(a)	**Identify** the types of Thermal energy storage systems. Write short notes.	6	CO2	K3
(b)	**Summarize** the causes of water pollution and control measures to prevent water pollution	6	CO4	K2

Course in charge **Module Coordinator** **HOD** **Principal**

KSIT

SET B

K.S. INSTITUTE OF TECHNOLOGY, BANGALORE – 560109

SECOND SESSIONAL TEST QUESTION PAPER 2022 – 23 ODD SEMESTER

USN | | | | | | | | | | |

Degree : B.E
Branch : ECE
Course Title : Energy and Environment
Duration : 90 Minutes

Semester: VII
Course Code: 18ME751
Date: 30/11/22
Max Marks: 30

Note: Answer **ONE full** question from each part.

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Q No.	Question	Marks	CO mapping	K-Level
	PART-A			
1(a)	**Outline** the aspects of ecosystem and oxygen cycle.	6	CO3	K2
(b)	**Explain** forest ecosystem. What are its types? How conservation of forest can be made.	6	CO3	K2
(c)	**Explain** ecological pyramid and ecological succession.	6	CO3	K2
	OR			
2(a)	**Outline** the importance and scope of environmental studies.	6	CO3	K2
(b)	**Explain** the utilization of nitrogen in ecosystem.	6	CO3	K2
(c)	**Explain** the desert ecosystem. What are its types?	6	CO3	K2
	PART-B			
3(a)	**Identify** the sensible heat and latent heat storage methods	6	CO2	K3
(b)	**Explain** the effects of ozone depletion and air pollution on plants and materials.	6	CO4	K2
4(a)	**Identify** the benefits of energy storage systems, the 3 processes in general in energy storage systems, the advantages, and disadvantages of Thermal Energy Storage systems.	6	CO2	K3
(b)	**Explain** the causes of air Pollution and control measures to prevent air pollution.	6	CO4	K2

Course in charge **Module Coordinator** **HOD** **Principal**

Selected

K.S. INSTITUTE OF TECHNOLOGY

VII SEM (2018 SCHEME)

III SESSIONAL TEST TIME TABLE (2022-2023)

DATE: 13-12-2022

DATE	TIME	COMPUTER SCIENCE AND ENGINEERING	ELECTRONICS AND COMMUNICATION ENGG	ELECTRONICS AND TELECOMMUNICATION ENGG	MECHANICAL ENGG
22-12-2022 THURSDAY	9.30 AM TO 11.00 AM	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING (18CS71)	COMPUTER NETWORKS (18EC71)	OPTICAL COMMUNICATION (18TE71)	CONTROL ENGINEERING (18ME71)
	2.00 PM TO 3.30 PM	BIG DATA ANALYTICS (18CS72)	VLSI DESIGN (18EC72)	WIRELESS COMMUNICATION (18TE72)	COMPUTER AIDED DESIGN & MANUFACTURING (18ME72)
23-12-2022 FRIDAY	9.30 AM TO 11.00 AM	USER INTERFACE DESIGN (18CS734)	SATELLITE COMMUNICATION (18EC732)	SATELLITE COMMUNICATION (18EC732)	TOTAL QUALITY MANAGEMENT (18ME734)
	2.00 PM TO 3.30 PM	CRYPTOGRAPHY (18CS744)	CRYPTOGRAPHY (18EC744)	CRYPTOGRAPHY (18EC744)	ADDITIVE MANUFACTURING (18ME741)
24-12-2022 SATURDAY	9.30 AM TO 11.00 AM	ENERGY AND ENVIRONMENT (18ME751)	ENERGY AND ENVIRONMENT (18ME751)	ENERGY AND ENVIRONMENT (18ME751)	PYTHON APPLICATION PROGRAMMING (18CS752)
	2.00 PM TO 3.30 PM	———	———		———

NOTE: All the students are strictly informed to wear lab uniforms, Mask and college ID Cards compulsory during the test.

13/12/22
ACADEMIC COORDINATOR
Head of the Department
Dept. of Mechanical Engg.
K.S. Institute of Technology
Bengaluru - 560 109.

13/12/22
PRINCIPAL
PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109

K. S. INSTITUTE OF TECHNOLOGY, BANGALORE - 109

V & VII SEMESTER - II & III INTERNAL TEST INVIGILATION DUTY (2022-2023)

Date	Timings	OB 201	OB 203	OB 204	OB 205	OB 206	OB 207	OB 208	OB 209	OB 305	OB 306	OB 307 (ECE-SH)	NB 103 (1st Floor-SH)	NB 303 (3rd Floor-SH)	NB 403 (4th Floor-SH)
22-12-2022 THURSDAY	9:30 am to 11:00 am	BK (CSE)	KBN (CSE)	LK (CSE)	GR (CSE)	MBR (ME)	RN (ME)	RGL (ME)	PHS (CSE)	VD (ECE)	PS (ECE)	KBM (CSE)	SV (ECE)	BA (ECE)	BHA (ECE)
	2:00 pm to 3:30	SD (CSE)	RH (CSE)	KRS (B&H)	KMS (CSE)	AK (ME)	MBR (ME)	LN (ME)	KP (ME)	NM (ME)	SST (ECE)	RM (AIML)	SS (AIML)	LKK (AIML)	AKG (ECE)
23-12-2022 FRIDAY	9:30 am to 11:00 am	BK (CSE)	SD (CSE)	KG (CSE)	ST (CSE)	LN (ME)	NM (ME)	RN (ME)	AS (AIML)	PA (ECE)	SST (ECE)	RN (ECE)	BA (ECE)	SV (ECE)	KBM (ECE)
	2:00 pm to 3:30	PKN (CSE)	GR (CSE)	KBN (CSE)	KMS (CSE)	RN (ME)	RGL (ME)	PHS (CSE)	MBR (ME)	SS (AIML)	LKK (AIML)	AS (AIML)	RN (ECE)	BA (ECE)	SV (ECE)
24-12-2022 SATURDAY	9:30 am to 11:00 am	LK (CSE)	RH (CSE)	SG (CSE)	PR (CSE)	PA (ECE)	AK (ME)	VD (ECE)	KBM (ECE)	PS (ECE)	BHA (ECE)	MKS (CSE)	PKN (CSE)	KG (CSE)	ST (CSE)
	1.30 pm to 3.00 pm	AS (AIML)	RM (AIML)	SS (AIML)	LKK (AIML)	PS (ECE)				BHA (ECE)	AKG (ECE)	KP (ME)			
	3.00 pm to 4.00 pm	RGL (ME)	PHS (CSE)	PA (ECE)	SST (ECE)	RNP (BS&H)				MKS (CSE)	SG (CSE)	PR (CSE)			

Mrs. Beena k	BK	Mr. Krishna Gudi	KG
Mr. Kushal Kumar B N	KBN	Mr.Somasekhar T	ST
Mr. Laxmikantha K	LK	Mrs. Pallavi K N	PKN
Mrs. Geetha R	GR	Mrs. Supreetha Gane	SG
Mr. Sanjoy Das	SD	Mrs. Pallavi R	PR
Mrs. Rashmi H	RH	Mr. Manoj Kumar S	MKS
Mrs. Kavya M S	KMS	Mrs. Radhika N P	RNP
Mrs. Shylaja K R	KRS	Mr. Rajesh G L	RGL
Mr. Manjunath B R	MBR	Mr. Prashanth H S	PHS
Amulyashree S	AS	Sahana Sharma	SS

Mr. Anil Kumar A	AK	Dr.Rekha.N	RN
Dr. L Nirmala	LN	Ms.Sangeetha.V	SV
Mr. Prasad K	KP	Ms.Barghavi.A	BA
Mr. Ranganath N	RN	Ms.Bhanumathi	BHA
Mr. Nagabhushana M	NM	Ms.Kavya.B.M	KBM
Mr.Praveen.A	PA	Ms.Vishalini Divakar	VD
Mr.Saleem.S.Tevaramani	SST		
Mr.Ashwini Kumar	AKG		
Roopa Murthy	RM		
Lakshmi K K	LKK		

NOTE: Issue and Collection of Blue Books at Design Lab, 3rd Floor NB, Mechanical Engg. Block

ACADEMIC COORDINATOR

PRINCIPAL

K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

Department of Electronics and Communication Engineering

Attendance of VII 'A & B' for THIRD Internal Test (2022-2023)

Room No: NB SH 303

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC052					
2	1KS19EC053					
3	1KS19EC054					
4	1KS19EC055					
5	1KS19EC056					
6	1KS19EC057	AB	AB	AB	AB	AB
7	1KS19EC058					
8	1KS19EC059					
9	1KS19EC061					
10	1KS19EC062	AB				
11	1KS19EC063					
12	1KS19EC064					
13	1KS19EC065					
14	1KS19EC066					
15	1KS19EC067					
16	1KS19EC068					
17	1KS19EC069					
18	1KS19EC070					
19	1KS19EC071					
20	1KS19EC073	Sahana.S	Sahana.S	Sahana.S	Sahana.S	Sahana.S
21	1KS19EC074	Saipriya	Saipriya	Saipriya	Saipriya	Saipriya
22	1KS19EC075					
23	1KS19EC076					
24	1KS19EC077					
25	1KS19EC078					
26	1KS19EC079					
27	1KS19EC081					
28	1KS19EC082					
29	1KS19EC083					
30	1KS19EC084					
DATE:		22/12/22	22/12/22	23/12/22	23/12/22	24/12/22
NO. OF STUDENTS PRESENT		28	29	29	29	29
NO. OF STUDENTS ABSENT		02	01	01	01	01
NAME OF INVIGILATOR		BA	Tejasvi	V. Sayeetha	BA	Krishna Gud
SIGNATURE OF INVIGILATOR						

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109
Department of Electronics and Communication Engineering
Attendance of VII 'A' for THIRD Internal Test (2022-2023)

Room No: 306

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC001					
2	1KS19EC002					
3	1KS19EC003	Aishwarya	Aishwarya	Aishwarya	Aishwarya	Aishwarya
4	1KS19EC004					
5	1KS19EC005					
6	1KS19EC006					
7	1KS19EC007					
8	1KS19EC008	Amulya	Amulya	Amulya	Amulya	Amulya
9	1KS19EC009					
10	1KS19EC010	Anjaliyt	Anjaliyt	Anjaliyt	Anjaliyt	Anjaliyt
11	1KS19EC011	Archana M	Archana M	Archana M	Archana M	Archana M
12	1KS19EC012					
13	1KS19EC014					
14	1KS19EC015					
15	1KS19EC016					
16	1KS19EC017					
17	1KS19EC018					
18	1KS19EC019					
DATE:		22/12/22	22/12/22	23/12/22	23/12/22	24/12/22
NO. OF STUDENTS PRESENT		18	18	18	18	18
NO. OF STUDENTS ABSENT		00	00	00	00	00
NAME OF INVIGILATOR		G Arunkumar	Kavya BM	Saleem S. Tevaramani	Lakshmi K K	Bhanumathi A
SIGNATURE OF INVIGILATOR				SST		

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

Department of Electronics and Communication Engineering

Attendance of VII 'A' for THIRD Internal Test (2022-2023)

Room No: OB SH 307

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC020					
2	1KS19EC021					
3	1KS19EC022					
4	1KS19EC023					
5	1KS19EC024					
6	1KS19EC025					
7	1KS19EC027					
8	1KS19EC028					
9	1KS19EC029					
10	1KS19EC030					
11	1KS19EC031					
12	1KS19EC032					
13	1KS19EC033	AB	AB			
14	1KS19EC035					
15	1KS19EC036					
16	1KS19EC037					
17	1KS19EC038					
18	1KS19EC039					
19	1KS19EC040					
20	1KS19EC041					
21	1KS19EC042					
22	1KS19EC043					
23	1KS19EC044					
24	1KS19EC045					
25	1KS19EC046					
26	1KS19EC047					
27	1KS19EC048	AB	AB	AB		
28	1KS19EC049					
29	1KS19EC050					
30	1KS19EC051					
DATE:		22/12/22	22/12/2022	23/12/22	23/12/22	24/12/22
NO. OF STUDENTS PRESENT		28	28	29	30	30
NO. OF STUDENTS ABSENT		02	02	01	0	0
NAME OF INVIGILATOR		Kavya BM	Roopa K M	Dr. Rekha N	Amulyashree S	MKS
SIGNATURE OF INVIGILATOR						

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

Department of Electronics and Communication Engineering

Attendance of VII 'B' for THIRD Internal Test (2022-2023)

Room No: NB SH 403

SL.NO	REGISTER NO.	COMPUTER NETWORKS (18EC71)	VLSI DESIGN (18EC72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS19EC085	AB	← AB →	AB		
2	1KS19EC086					
3	1KS19EC087		← AB →			
4	1KS19EC088	AB	← AB →			
5	1KS19EC089		← AB →			
6	1KS19EC090					
7	1KS19EC092					
8	1KS19EC093					← AB →
9	1KS19EC094					
10	1KS19EC095					
11	1KS19EC096					
12	1KS19EC097				AB	
13	1KS19EC098					
14	1KS19EC099					
15	1KS19EC100					
16	1KS19EC101					
17	1KS19EC102					
18	1KS19EC103					
19	1KS19EC104					
20	1KS19EC105					
21	1KS19EC106					
22	1KS19EC107					
23	1KS19EC108					
24	1KS18EC089					
25	1KS20EC400	AB	← AB →			
26	1KS20EC401					
27	1KS20EC402					
DATE:		22/12/22	22/12/22	23/12/22	23/12/22	24/12/22
NO. OF STUDENTS PRESENT		24	22	26	26	26
NO. OF STUDENTS ABSENT		03	05	01	01	01
NAME OF INVIGILATOR		SST	PS	BHA	SV	
SIGNATURE OF INVIGILATOR		SST				

K.S.INSTITUTE OF TECHNOLOGY, BANGALORE - 109

Department of Electronics and Telecommunication Engineering

Attendance of VII Sem for THIRD Internal Test (2022-2023)

Room No: NB SH 103

SL.NO	REGISTER NO.	OPTICAL COMMUNICATION (18TE71)	WIRELESS COMMUNICATION (18TE72)	SATELLITE COMMUNICATION (18EC732)	CRYPTOGRAPHY (18EC744)	ENERGY AND ENVIRONMENT (18ME751)
1	1KS18TE005	Ankitha	Ankitha	Ankitha	Ankitha	Ankitha
2	1KS19ET002	Chaitra.C	Chaitra.C	Chaitra.C	Chaitra.C	Chaitra.C
3	1KS19ET003	Nitchitha	Nitchitha	Nitchitha	Nitchitha	Nitchitha
4	1KS19ET004	Mahadev.AC	Mahadev.AC	Mahadev.AC	Mahadev.AC	Mahadev.AC
5	1KS19ET005					
6	1KS19ET006	Nubin	Nubin	Nubin	Nubin	Nubin
7	1KS19ET007	Niranjan S Rao	Niranjan S Rao	Niranjan S Rao	Niranjan S Rao	Niranjan S Rao
8	1KS19ET008	Rishi	Rishi	Rishi	Rishi	Rishi
9	1KS19ET009	Rohit Kumar	Rohit Kumar	Rohit Kumar	Rohit Kumar	Rohit Kumar
10	1KS19ET010	Arjun	Arjun	Arjun	Arjun	Arjun
11	1KS19ET011	Shwetha	Shwetha	Shwetha	Shwetha	Shwetha
12	1KS19ET012	Vaishnavi	Vaishnavi	Vaishnavi	Vaishnavi	Vaishnavi
DATE:		22/12/22	22/12/22	23/12/22	23/12/22	24/12/22
NO. OF STUDENTS PRESENT		12	12	12	12	12
NO. OF STUDENTS ABSENT		NIL	NIL	00	00	NIL
NAME OF INVIGILATOR		V. Sangeetha	Sahana Sharma	BA	Dr. Rekha. N	PALLAVI. K.N
SIGNATURE OF INVIGILATOR		V. Sangeetha	Sahana Sharma	BA	Dr. Rekha. N	PALLAVI. K.N

SET A

K.S. INSTITUTE OF TECHNOLOGY, BANGALORE – 560109

THIRD SESSIONAL TEST QUESTION PAPER 2022 – 23 ODD SEMESTER

USN | | | | | | | | | | |

Degree	: **B.E**	**Semester:**	**VII**
Branch	: **ECE**	**Course Code:**	**18ME751**
Course Title	: **Energy and Environment**	**Date:**	**24/12/22**
Duration	: **90 Minutes**	**Max Marks:**	**30**

Note: Answer **ONE full** question from each part.

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Q No.	Question	Marks	CO mapping	K-Level
	PART-A			
1(a)	**Outline** the aspects of ozone layer depletion.	6	CO5	K2
(b)	**Explain** the types, causes, and objectives of wasteland reclamation.	6	CO5	K2
(C)	**Explain** water (Prevention and Control of Pollution) Act.	6	CO5	K2
	OR			
2(a)	**Outline** the Environment protection Act and Environment Impact Assessment (EIA).	6	CO5	K2
(b)	**Explain** any two case studies related to Nuclear Hazards.	6	CO5	K2
(c)	**Explain** forest conservation (Prevention and Control of Pollution) Act.	6	CO5	K2
	PART-B			
3(a)	**Identify** the causes and effects of Noise Pollution. Mention control measures.	6	CO4	K2
(b)	**Explain** any two case studies related to pollution of environment.	6	CO4	K2
4(a)	**Identify** the environmental problems and health risks caused by hazardous wastes.	6	CO4	K2
(b)	**Explain** the role of an individual in prevention of pollution	6	CO4	K2

Course in charge **Module Coordinator** **HOD** **Principal**

SET B

K.S. INSTITUTE OF TECHNOLOGY, BANGALORE – 560109
THIRD SESSIONAL TEST QUESTION PAPER 2022 – 23 ODD SEMESTER

USN | | | | | | | | | | |

Degree : **B.E**
Branch : **ECE**
Course Title : **Energy and Environment**
Duration : **90 Minutes**

Semester: VII
Course Code: 18ME751
Date: 24/12/22
Max Marks: 30

Note: Answer **ONE full** question from each part.

K-Levels: K1-Remebering, K2-Understanding, K3-Applying, K4-Analyzing, K5-Evaluating, K6-Creating

Q No.	Question	Marks	CO mapping	K-Level
	PART-A			
1(a)	**Outline** the aspects of acid rain and its effects.	6	CO5	K2
(b)	**Explain** the wasteland reclamation methods.	6	CO5	K2
(c)	**Explain** Air (Prevention and Control of Pollution) Act.	6	CO5	K2
	OR			
2(a)	**Outline** the concept of Consumerism and waste products. Mention control measures explaining the roles of an individual in protecting environment.	6	CO5	K2
(b)	**Explain** any two case studies related to pollution of environment.	6	CO5	K2
(c)	**Explain** wildlife (Prevention and Control of Pollution) Act.	6	CO5	K2
	PART-B			
3(a)	**Identify** the causes and effects of Thermal Pollution. Mention control measures.	6	CO4	K2
(b)	**Explain** Characteristics of hazardous wastes.	6	CO4	K2
4(a)	**Identify** the causes and effects of Marine Pollution. Mention control measures.	6	CO4	K2
(b)	**Explain** solid waste management techniques.	6	CO4	K2

Course in charge **Module Coordinator** **HOD** **Principal**

Selected

KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Suma Santosh

SUBJECT CODE/NAME :21EC32/DIGITAL SYSTEM DESIGN USING VERILOG

SEMESTER/YEAR/SEC :III/II/B

ACADEMIC YEAR : 2022-23

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date (A)
1	Introduction to combinational logic. Definition of combinational logic	L	BB+P	1	1	31/10/22
2	Introduction to combinational logic. Definition of combinational logic	L	BB+P	1	2	02/11/22
3	Canonical forms	L	BB+P	1	3	03/11/22
4	Canonical forms	L	BB+P	1	4	04/10/22
5	Generation of switching equations from truth tables	L	BB+P	1	5	07/11/22
6	Generation of switching equations from truth tables	L	BB+P	1	6	08/11/22
7	Karnaugh maps- up to 4 variables	L	BB+P	1	7	09/11/22
8	Karnaugh maps- up to 4 variables	L	BB+P	1	8	10/11/22
9	Quine-McCluskey Minimization Technique	L	BB+P	1	9	12/11/22
10	Quine-McCluskey Minimization Technique	L	BB+P	1	10	14/11/22
11	Quine-McCluskey Minimization Technique	L	BB+P	1	11	15/11/22
12	Quine-McCluskey using Don't Care Terms	L	BB+P	1	12	16/11/22
13	Quine-McCluskey using Don't Care Terms	L	BB+P	1	13	17/11/22
MODULE 4: Introduction to Verilog						

14	Structure of Verilog module	L	BB+P	1	14	18/11/22
15	Structure of Verilog module	L	BB+P	1	15	21/11/22
16	Operators, Data Types	L	BB+P	1	16	22/11/22
17	Operators, Data Types	L	BB+P	1	17	23/11/22
18	Styles of Description	L	BB+P	1	18	24/11/22
19	Verilog Data flow description	L	BB+P	1	19	25/11/22
20	Verilog Data flow description	L	BB+P	1	20	26/11/22
21	Highlights of Data flow description	L	BB+P	1	21	1/12/22
22	Highlights of Data flow description	L	BB+P	1	22	2/12/22
23	Highlights of Data flow description	L	BB+P	1	23	5/12/22
24	Structure of Data flow description	L	BB+P	1	24	6/12/22
25	Structure of Data flow description	L	BB+P	1	25	7/12/22
26	Structure of Data flow description	L	BB+P	1	26	8/12/22
	MODULE 2: Logic Design with MSI Components and Programmable Logic Devices					
27	Binary Adders and Subtractors	L	BB+P	1	27	9/12/22
28	Binary Adders and Subtractors	L	BB+P	1	28	10/12/22
29	Comparators	L	BB+P	1	29	12/12/22
30	Comparators	L	BB+P	1	30	13/12/22
31	Decoders	L	BB+P	1	31	14/12/22
32	Decoders	L	BB+P	1	32	15/12/22
33	Decoders	L	BB+P	1	33	16/12/22
34	Encoders, Multiplexers,	L	BB+P	1	34	19/12/22
35	Encoders, Multiplexers,	L	BB+P	1	35	20/12/22
36	Encoders, Multiplexers,	L	BB+P	1	36	21/12/22
37	Programmable Logic Devices (PLDs)	L	BB+P	1	37	22/12/22
38	Programmable Logic Devices (PLDs)	L	BB+P	1	38	23/12/22
39	Programmable Logic Devices (PLDs)	L	BB+P	1	39	24/12/22
	MODULE 3: Flip-Flops and its Applications					
40	The Master-Slave Flip-flops (Pulse-Triggered flip-flops): SR flip-flops,	L	BB+P	1	40	26/12/22
41	The Master-Slave Flip-flops (Pulse-	L	BB+P	1	41	27/12/22

	Triggered flip-flops): JK flip-flops,					
42	Characteristic equations	L	BB+P	1	42	28/12/22
43	Registers	L	BB+P	1	43	29/12/22
44	Binary Ripple Counters	L	BB+P	1	44	30/12/22
45	Binary Ripple Counters	L	BB+P	1	45	31/12/22
46	Synchronous Binary Counters	L	BB+P	1	46	5/1/23
47	. Synchronous Binary Counters	L	BB+P	1	47	6/1/23
48	Counters based on Shift Registers	L	BB+P	1	48	9/1/23
49	Counters based on Shift Registers	L	BB+P	1	49	10/1/23
50	Design of Synchronous mod-n Counter using clocked T, JK, D and SR flip-flops.	L	BB+P	1	50	11/1/23
51	Design of Synchronous mod-n Counter using clocked T, JK, D and SR flip-flops.	L	BB+P	1	51	12/1/23
52	Design of Synchronous mod-n Counter using clocked T, JK, D and SR flip-flops.	L	BB+P	1	52	13/1/23
	MODULE 5: Verilog Behavioral description					
53	Structure	L	BB+P	1	53	16/1/23
54	Variable Assignment Statement	L	BB+P	1	54	17/1/23
55	Variable Assignment Statement	L	BB+P	1	55	18/1/23
56	Sequential Statements, Loop Statements	L	BB+P	1	56	19/1/23
57	Verilog Behavioral Description of Multiplexers	L	BB+P	1	57	20/1/23
58	Verilog Structural description	L	BB+P	1	58	23/1/23
59	Highlights of Structural description	L	BB+P	1	59	24/1/23
60	Highlights of Structural description	L	BB+P	1	60	25/1/23
61	Organization of structural description	L	BB+P	1	61	27/1/23
62	Structural description of ripple carry adder	L	BB+P	1	62	28/1/23
63	Structural description of ripple carry adder	L	BB+P	1	63	30/1/23
64	Structural description of ripple carry adder	L	BB+P	1	64	31/1/23
65	Structural description of ripple carry adder	L	BB+P	1	65	1/2/23

66	Revision	L	BB+P	1	66	7/2/23
67	Revision	L	BB+P	1	67	11/2/23

Signature of Course Incharge

Signature of Module Coordinator

Signature of HOD

(15)

KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : S.CHRISTO JAIN

SUBJECT CODE/NAME :21EC33/ Basic Signal Processing

SEMESTER/YEAR/SEC : III/ II/B

ACADEMIC YEAR : 2022-23

SL No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	Module 1: Vector Spaces					
1	Introduction Vector spaces.	L	BB+P	1	1	31/10/22
2	Introduction Vector spaces.	L	BB+P	1	2	2/11/22
3	Numerical	L	BB+P	1	3	3/11/22
4	Null subspaces	L	BB+P	1	4	4/11/22
5	Numerical	L	BB+P	1	5	7/11/22
6	Rank and Row reduced form,	L	BB+P	1	6	8/11/22
7	Independence	L	BB+P	1	7	09/11/22
8	Basis and dimension, Dimensions of the four subspaces,	L	BB+P	1	8	10/11/22
9	Rank-Nullity Theorem, Linear Transformations	L	BB+P	1	9	12/11/22
10	Orthogonal Vectors and Subspaces	L	BB+P	1	10	14/11/22
11	Projections and Least squares	L	BB+P	1	11	15/11/22
12	Orthogonal Bases and Gram-Schmidt Orthogonalization procedure	L	BB+P	1	12	16/11/22

	Module 2: Eigen Values and Vectors					
13	Review of Eigen values	L	BB+P	1	13	17/11/22
14	Numerical	L	BB+P	1	14	18/11/22
15	Diagonalization of a Matrix, Special	L	BB+P	1	15	21/11/22
16	Numerical	L	BB+P	1	16	22/11/22
17	Matrices (Positive Definite, Symmetric) and their properties	L	BB+P	1	17	23/1122
18	Numerical	L	BB+P	1	18	24/12/22
19	Singular Value Decomposition	L	BB+P	1	19	25/12/22
	Module 3: Introduction and Classification of signals					
20	Definition of signal and systems with examples,	L	BB+P	1	20	1/12/22
21	Numerical	L	BB+P	1	21	2/12/22
22	Elementary signals	L	BB+P	1	22	5/12/22
23	Numerical	L	BB+P	1	23	6/12/22
24	Functions: Exponential, sinusoidal	L	BB+P	1	24	7/12/22
25	step, impulse and ramp functions	L	BB+P	1	25	12/12/22
26	Basic Operations on signals: Amplitude scaling, addition,	L	BB+P	1	26	13/12/22
27	multiplication, time scaling, time shift	L	BB+P	1	27	14/12/22
28	Time reversal. Expression of triangular,	L	BB+P	1	28	15/12/22
29	rectangular and other waveforms in terms of elementary signals	L	BB+P	1	29	16/12/22
30	System Classification and properties:Linear-nonlinear, Time variant - invariant, causal-noncausal,	L	BB+P	1	30	19/12/22
31	Static-dynamic, stable-unstable, invertible	L	BB+P	1	31	20/12/22

Module =4: Time Domain Representation of LTI System						
32	Impulse response, convolution sum	L	BB+P	1	32	21/12/22
33	Computation of convolution sum using graphical method for unit step and unit step,	L	BB+P	1	33	22/12/22
34	Computation of convolution sum using graphical method for unit step and unit step,	L	BB+P	1	34	23/12/22
35	Numerical	L	BB+P	1	35	24/12/22
36	unit step and exponential,	L	BB+P	1	36	26/12/22
37	exponential and exponential	L	BB+P	1	37	27/12/22
38	unit step and rectangular	L	BB+P	1	38	28/12/22
39	Rectangular and rectangular.	L	BB+P	1	39	29/12/22
40	LTI system Properties in terms of impulse response: System interconnection,	L	BB+P	1	40	30/12/22
41	Memory less, Causal,	L	BB+P	1	41	31/12/22
42	Stable, Invertible and Deconvolution and step response	L	BB+P	1	42	5/1/23
43	Stable, Invertible and Deconvolution and step response	L	BB+P	1	43	6/1/23
Module 5: The Z-Transforms:						
44	Z transform,	L	BB+P	1	44	6/1/23
45	properties of the region of convergence	L	BB+P	1	45	9/1/23
46	properties of the Z-transform	L	BB+P	1	46	10/1/23
47	Numerical	L	BB+P	1	47	11/1/23
48	Inverse Z-transform by partial fraction	L	BB+P	1	48	12/1/23
49	Causality and stability	L	BB+P	1	49	13/1/23
50	Transform analysis of LTI systems.	L	BB+P	1	50	16/1/23
51	Transform analysis of LTI systems.	L	BB+P	1	51	17/1/23
52	Numerical	L	BB+P	1	52	18/1/23

Signature of Course In charge

Signature of HOD

Principal

K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : **Dr. Chanda. V. Reddy**

COURSE CODE/TITLE : **21EC34 / ANALOG ELECTRONIC CIRCUITS**

YEAR/ SEMESTER/SECTION : **II / III/ A**

BRANCH : **ECE**

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	Module 1:					
1	**BJT Biasing:** Biasing in BJT amplifier circuits: The Classical Discrete circuit bias (Voltage-divider bias),	L+D	BB / PPT	1	1	31/10/2022
2	The Classical Discrete circuit bias (Voltage-divider bias), problems	L+D	BB / PPT	2	3	2/11/2022, 3/11/2022
3	Biasing using a collector to base feedback resistor.	L+D	BB / PPT	2	5	4/11/2022, 7/11/2022
4	**Small signal operation and Models:** Collector current and transconductance,	L+D	BB / PPT	1	6	8/11/2022
5	Base current and input resistance,	L+D	BB / PPT	1	7	9/11/2022
6	Emitter current and input resistance,	L+D	BB / PPT	1	8	10/11/2022

7	voltage gain, Separating the signal and the DC quantities,	L+D	BB / PPT	1	10	12/11/2022
8	The hybrid Π model,	L+D	BB / PPT	1	11	14/11/2022
9	The T model.	L+D	BB / PPT	1	12	15/11/2022,
10	**MOSFETs:** Biasing in MOS amplifier circuits: Fixing VGS,	L+D	BB / PPT	1	13	16/11/2022,
11	Fixing VG, Drain to Gate feedback resistor.	L+D	BB / PPT	1	14	17/11/2022
12	Small signal operation and modeling: The DC bias point, signal current in drain, voltage gain,	L+D	BB / PPT	1	15	18/11/2022
13	small signal equivalent circuit models, transconductance, The T equivalent circuit model.	L+D	BB / PPT	1	16	21/11/2022
	Module 2:					
14	**MOSFET Amplifier configuration:** Basic configurations, characterizing amplifiers,	L+D	BB / PPT	1	17	22/11/2022
15	CS amplifier with and without source resistance RS,	L+D	BB / PPT	1	18	23/11/2022
16	Source follower.	L+D	BB / PPT	1	19	24/11/2022
17	**MOSFET internal capacitances and High frequency model:** The gate capacitive effect, Junction capacitances	L+D	BB / PPT	1	20	25/11/2022
18	High frequency model.	L+D	BB / PPT	1	21	26/11/2022
19	**Frequency response of the CS amplifier:** The three frequency bands,	L+D	BB / PPT	1	22	1/12/2022
20	high frequency response,	L+D	BB / PPT	2	24	2/12/2022, 5/12/2022
21	Low frequency response.	L+D	BB / PPT	2	26	6/12/2022, 7/12/2022,
22	**Oscillators:** FET based Phase shift oscillator,	L+D	BB / PPT	1	27	12/12/2022,
23	LC and Crystal Oscillators (no derivation)	L+D	BB / PPT	2	29	13/12/2022, 14/12/2022

Module 3:						
23	**Feedback Amplifier:** General feedback structure, Properties of negative feedback, The Four Basic Feedback Topologies,	L+D	BB / PPT	2	29	15/12/2022
24	The series-shunt (Qualitative Analysis).	L+D	BB / PPT	1	30	16/12/2022
25	series-series (Qualitative Analysis).	L+D	BB / PPT	1	31	19/12/2022
26	shunt-shunt (Qualitative Analysis).	L+D	BB / PPT	1	32	20/12/2022
27	shunt-series amplifiers (Qualitative Analysis).	L+D	BB / PPT	1	33	21/12/2022
28	**Output Stages and Power Amplifiers:** Introduction, Classification of output stages, Class A output stage	L+D	BB / PPT	1	34	22/12/2022
29	Class B output stage: Transfer Characteristics, Power Dissipation, Power Conversion efficiency,	L+D	BB / PPT	2	36	23/12/2022, 24/12/2022
30	Class AB output stage,	L+D	BB / PPT	1	37	26/12/2022
31	Class C tuned Amplifier	L+D	BB / PPT	1	38	27/12/2022
Module 4:						
32	**Op-Amp Circuits:** Op-amp DC and AC Amplifiers	L+D	BB / PPT	1	39	28/12/2022
33	DAC - Weighted resistor and R-2R ladder	L+D	BB / PPT	1	40	29/12/2022
34	ADC Successive approximation type,	L+D	BB / PPT	1	41	30/12/2022
35	Small Signal half wave rectifier, Absolute value output circuit,	L+D	BB / PPT	1	42	31/12/2022

36	Active Filters: First low-pass Butterworth filters,	L+D	BB / PPT	1	43	5/1/2023
37	second order low-pass Butterworth filters	L+D	BB / PPT	1	44	6/1/2023
38	First order low-pass Butterworth filters,	L+D	BB / PPT	1	45	9/1/2023
39	second order high-pass Butterworth filters,	L+D	BB / PPT	1	46	10/1/2023
40	Band-pass filters,	L+D	BB / PPT	1	47	11/1/2023
41	Band reject filters.	L+D	BB / PPT	1	48	12/1/2023
42	**555 Timer and its applications:** Monostable Multivibrators.	L+D	BB / PPT	1	49	13/1/2023
43	Astable Multivibrators.	L+D	BB / PPT	1	50	16/1/2023
	Module 5:					
44	**Overview of Power Electronic Systems:** Power Electronic Systems,	L+D	BB / PPT	1	51	17/1/2023
45	Power Electronic Converters and Applications.	L+D	BB / PPT	2	53	18/1/2023, 19/1/2023
46	**Thyristors:** Static Anode-Cathode characteristics and Gate characteristics of SCR,	L+D	BB / PPT	1	54	20 /1/2023,
47	Static Gate characteristics of SCR,	L+D	BB / PPT	1	55	23/1/2023
48	Turn-ON methods,	L+D	BB / PPT	1	56	24 /1/2023
49	Turn-off Mechanism	L+D	BB / PPT	1	57	25 /1/2023
50	Turn-OFF Methods: Natural and Forced Commutation – Class A without design consideration.	L+D	BB / PPT	1	58	27 /1/2023

51	**Gate Trigger Circuit:** Resistance Firing Circuit	L+D	BB / PPT	1	59	28 /1/2023
52	Resistance capacitance firing circuit,	L+D	BB / PPT	1	60	30 /1/2023
53	Unijunction Transistor: Basic operation and UJT Firing Circuit.	L+D	BB / PPT	1	61	31 /1/2023
54	Revision	D	BB	1	62	1/2/2023

Text Books:

1. Microelectronic Circuits, Theory and Applications, Adel S Sedra, Kenneth C Smith, 6th Edition, Oxford, 2015. ISBN:978-0-19-808913-1
2. Op-Amps and Linear Integrated Circuits, Ramakant A Gayakwad, 4th Edition, Pearson Education, 2018. ISBN: 978-93-325-4991-3
3. Electronic Principles, Albert Malvino, David J Bates, 7th Edition, McGraw IIill Education (India) Private Limited, 2017, ISBN:978-0-07-063424-4

Details of the teaching aids: 1. **BB – Black Board**
2. **PPT Power Point Presentation**

Course Incharge **Module coordinator** **HOD ECE**

HEAD OF THE DEPARTMENT
Dept. of Electronics & Communication Engg
K.S. Institute of Technology
Bengaluru - 560 109

KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Mrs. Vishalini Divakar

SUBJECT CODE/NAME :18EC51/TECHNOLOGICAL INNOVATION MANAGEMENT AND ENTREPRENEURSHIP

SEMESTER/YEAR/SEC : V/ III/A

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date A Section
	MODULE 1: Management & Planning					
1	**Management:** Nature and Functions of Management – Importance, Definition	L+D	BB	1	1	11.10.2022
2	Management Functions, Levels of Management	L+D	BB	1	2	12.10.2022
3	Roles of Manager, Managerial Skills	L+ D	BB	1	3	13.10.2022
4	Management & Administration, Management as a Science, Art &Profession	L+D	BB	1	4	14.10.2022
5	ProjectCase Studies	L+D	BB	1	5	15.10.2022
6	Planning-Nature, Importance	L+D	BB	1	6	18.10.2022
7	Types of Plans, Steps and Limitations of Planning	L+D	BB	1	7	19.10.2022
8	Decision Making – Meaning, Types	L+D	BB	1	8	20.10.2022
9	Steps in Decision Making	L+D	BB	1	9	21.10.2022
10	ProjectCase Studies	L+D	BB	1	10	25.10.2022
	MODULE 2:Organizing and Staffing: Organization, Directing and Controlling					
11	Meaning, Characteristics, Process of Organizing, Principles of Organizing, Span of Management (meaning and importance only),	L+ D	BB	1	11	27.10.2022

12	Departmentalization, Committees–Meaning, Types of Committees, Centralization Vs Decentralization of Authority and Responsibility	L+D	BB	1	12	28.10.2022
13	Staffing-Need and Importance, Recruitment and Selection Process, Directing and Controlling: Meaning and Requirements of Effective Direction, Giving Orders	L+D	BB	1	13	29.10.2022
14	Motivation-Nature of Motivation, Motivation Theories (Maslow's Need-Hierarchy Theory and Herzberg's Two Factor Theory);	L+D	BB	1	14	2.11.2022
15	Communication – Meaning, Importance and Purposes of Communication; Leadership-, Behavioural Approach of Leadership; Coordination-Meaning	L+D	BB	1	15	3.11.2022
16	Types, Techniques of Coordination; Controlling – Meaning, Need for Control System, Benefits of Control,	L+D	BB	1	16	4.11.2022
17	Essentials of Effective Control System, Steps in Control Process	L+D	BB	1	17	8.11.2022
18	Project + Case studies	L+D	BB	1	18	9.11.2022
	Module 3: Social Responsibilities of Business, Entrepreneurship					
19	**Social Responsibilities of Business:** Meaning of Social Responsibility, Social Responsibilities of Business towards Different Groups	L+D	BB	1	19	12.11.2022
20	**Internals-I**			1	20	14.11.2022
21	Responsibilities of Business towards Different Groups , Social Audit	L+D	BB	1	21	18.11.2022
22	Business Ethics and Corporate Governance	L+D	BB	1	22	22.11.2022
23	**Entrepreneurship**: Definition of Entrepreneur, Importance of Entrepreneurship, concepts of Entrepreneurship	L+D	BB	1	23	23.11.2022
24	Characteristics of successful Entrepreneur	L+D	BB	1	24	24.11.2022
25	Classification of Entrepreneurs, Myths of Entrepreneurship	L+D	BB	1	25	25.11.2022
26	Entrepreneurial Development models, Entrepreneurial development cycle	L+D	BB	1	26	26.11.2022
27	Problems faced by Entrepreneurs and capacity building for Entrepreneurship	L+D	BB	1	27	29.11.2022

28	Project+ Case studies	L+D	BB	1	28	30.11.2022
	Module 4: Family Business, Idea Generation and Feasibility Analysis					
29	Meaning, designing, analyzing and improvising; Business Plan – Meaning,Scope and Need	L+D	BB	1	29	1.12.2022
30	Financial, Marketing, Human Resource and Production/Service Plan; Business plan Formats	L+D	BB	1	30	2.12.2022
31	Project report preparation and presentation, Why some Business Plan fails?	L+D	BB	1	31	6.12.2022
32	Financing and How to start a Business? Financial opportunity identification; Banking sources	L+D	BB	1	32	7.12.2022
33	Nonbanking Institutions and Agencies; Venture Capital – Meaning and Role in Entrepreneurship	L+D	BB	1	33	8.12.2022
34	Government Schemes for funding business; Pre launch, Launch and Post launch requirements;	L+D	BB	1	34	9.12.2022
35	Procedure for getting License and Registration; Challenges and Difficulties in Starting an Enterprise	L+D	BB	1	35	10/12/2022
36	Project Design and Network Analysis: Introduction, Importance of Network Analysis,	L+D	BB	1	36	13/12/2022
37	Network Techniques, Need for Network Techniques	L+D	BB	1	37	14/12/2022
38	Origin of PERT and CPM, Network,	L+D	BB	1	38	15/12/202
39	Steps in PERT CPM, Advantages, Limitations and Differences	L+D	BB	1	39	16/12/2022
40	**Internals-II**	L+D	BB	1	40	19/12/2022
	Module 5: Business model, Financing and How to start a Business?					
41	Project+ Case studies	L+D	BB	1	41	22/12/2022
42	**Business model**–Meaning, designing, analyzing and improvising	L+D	BB	1	42	23/12/2022
43	Business Plan – Meaning,Scope and Need; Financial, Marketing	L+D	BB	1	43	24/12/2022
44	Human Resource and Production/Service Plan; Business plan Formats	L+D	BB	1	44	27/12/2022
45	Human Resource and Production/Service Plan; Business	L+D	BB	1	45	28/12/2022

	plan Formats					
46	Project report preparation and presentation;	L+D	BB	1	46	29/12/2022
47	Project report preparation and presentation;	L+D	BB	1	47	30/12/2022
48	Why some Business Plan fails?	L+D	BB	1	48	3.1.2023
49	**Financing and How to start a Business?** Financial opportunity identification	L+D	BB	1	49	4.1.2023
50	Banking sources	L+D	BB	1	50	5.1.2023
51	Nonbanking Institutions and Agencies	L+D	BB	1	51	6.1.2023
52	Venture Capital – Meaning and Role in Entrepreneurship; Government	L+D	BB	1	52	10.1.2023
53	Schemes for funding business; Pre launch, Launch and Post launch requirements	L+D	BB	1	53	11.1.2023
54	Schemes for funding business; Pre launch, Launch and Post launch requirements	L+D	BB	1	54	12.1.2023
55	Procedure for getting License and Registration	L+D	BB	1	55	13.1.2023
56	Challenges and Difficulties in Starting an Enterprise	L+D	BB	1	56	17.1.2023
57	Challenges and Difficulties in Starting an Enterprise	L+D	BB	1	57	17.1.2023
58	**Internals-III**			1	58	18.1.2023
59	University Question paper review	L+D	BB	1	59	27.1.2023

Course In charge

Module Coordinator

HOD

PRINCIPAL

K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
COURSE PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : V.SANGEETHA

COURSE CODE/TITLE : 18EC52/ DIGITAL SIGNAL PROCESSING

YEAR/ SEMESTER/SECTION : III/VI/A

BRANCH : ECE

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	MODULE 1: Discrete Fourier Transforms (DFT)					
1	Discrete Fourier Transforms (DFT): Frequency domain sampling and reconstruction of discrete time signals	L+D	BB	1	1	10.10.2021
2	DFT as a linear transformation	L+D	BB	1	2	11.10.2021
3	DFT and its relationship with other transforms	L+D	BB	1	3	12.10.2021
4	Properties of DFT-Linearity, Periodicity	L+D	BB	1	4	13.10.2021
5	Properties of DFT-Symmetry	L+D	BB	1	5	15.10.2021
6	Multiplication of two DFTs- the circular convolution	L+D	BB	1	6	17.10.2021
7	Multiplication of two DFTs- the circular convolution	L+D	BB	1	7	18.10.2021
8	Additional DFT Properties-Circular Time, frequency shift problems	L+D	BB	1	8	19.10.2021
9	Circular convolution in time, Parseval's Theorem	L+D	BB	1	9	20.10.2021
10	Problems on different properties	L+PS	BB	1	10	27.10.2021

MODULE 2: Linear Filtering methods based on the DFT						
11	Use of DFT in linear filtering	L+D	BB	1	11	31.10.2022
12	Filtering of long data sequences	L+D	BB	1	12	02.11.2022
13	Overlap-save problems	L+D	BB	1	13	03.11.2022
14	Internal Assessment –I			1	14	07.11.2022
15	Overlap-add method problems	L+D	BB	1	15	10.11.2022
16	Fast-Fourier-Transform (FFT) algorithms:	L+D	BB	1	16	12.11.2022
17	Direct computation of DFT, need for efficient computation of the DFT (FFT algorithms)			1	17	14.11.2022
18	Radix-2 FFT algorithm for the computation of DFT and IDFT–. decimation-in-time and decimation-in-frequency algorithms	L+D	BB	1	18	15.11.2022
19	Problems on DIT FFT	L+PS	BB	1	19	16.11.2022
20	Problems on DIF FFT	L+PS	BB	1	20	17.11.2022
21	Problems on DIT,DIF FFT	L+PS	BB	1	21	21.11.2022
MODULE 3: Design of FIR Filters						
22	Structure for FIR Systems	L+AV	LCD	1	22	22.11.2022
23	Direct form, Linear Phase	L+D	BB	1	23	23.11.2022
24	Lattice structure	L+AV	LCD	1	24	24.11.2022
25	FIR filter design: Introduction to FIR filters	L+D	BB	1	25	26.11.2022
26	design of FIR filters using - Rectangular	L+D	BB	1	26	28.11.2022
27	Hamming, Hanning and Bartlett windows	L+D	BB	1	27	29.11.2022
28	Hamming, Hanning and Bartlett windows	L+D	BB	1	28	30.11.2022
29	Hamming, Hanning and Bartlett windows	L+D	BB	1	29	01.12.2022
30	Problems on Hamming window	L+PS	BB	1	30	05.12.2022
MODULE 4: IIR Filter Design						
31	Structure for IIR Systems: Direct form, Parallel form structures	L+D	BB	1	31	06.12.2022
32	Cascade form structure	L+D	BB	1	32	07.12.2022

33	IIR filter design: Characteristics of commonly used analog filter – Butterworth and Chebyshev filters	L+D	BB	1	33	08.12.2022
34	Analog to analog frequency transformations	L+D	BB	1	34	10.12.2022
35	Internal Assessment –II			1	35	12.12.2022
36	Design of IIR Filters from analog filter using Butterworth filter	L+D	BB	1	36	15.12.2022
37	Problems on Impulse invariance	L+PS	BB	1	37	19.12.2022
38	Problems on Impulse invariance	L+PS	BB	1	38	20.12.2022
39	Bilinear transformation	L+D	BB	1	39	21.12.2022
40	Problems on Bilinear transformation	L+PS	BB	1	40	23.12.2022
41	Problems on Bilinear transformation	L+PS	BB	1	41	24.12.2022
42	Problems on Bilinear transformation	L+PS	BB	1	42	26.12.2022
43	Problems on IIR Filter Structure	L+PS	BB	1	43	27.12.2022
	MODULE 5: Digital Signal Processors					
44	DSP Architecture	L+D	BB	1	44	28.12.2022
45	DSP Hardware Units	L+D	BB	1	45	29.12.2022
46	Fixed point format, Floating point Format	L+D	BB	1	46	02.01.2023
47	IEEE Floating point formats, Fixed point digital signal processors	L+D	BB	1	47	03.01.2023
48	Floating point processors	L+D	BB	1	48	04.01.2023
49	FIR filter implementations in Fixed point systems	L+D	BB	1	49	05.01.2023
50	IIR filter implementations in Fixed point systems	L+D	BB	1	50	07.01.2023
51	Revision of module 1,2	L+D	BB	1	51	09.01.2023
52	Revision of module 3,4	L+D	BB	1	52	10.01.2023
53	Revision of module 5	L+D	BB	1	53	11.01.2023
54	Revision of University QP	L+D	BB	1	54	16.01.2023
55	Internal Assessment –III			1	55	18.01.2023
56	Revision of University QP	L+D	BB	1	56	21.01.2023

Text Books:

1. Digital signal processing – Principles Algorithms & Applications, Proakis & Monalakis, Pearson education, 4th Edition, New Delhi, 2007.
2. Li Tan, Jean Jiang," Digital Signal processing-Fundamentals and Applications", Academic press, 2013. ISBN:978-0-12-415893

Reference Books:

1. Sanjit K Mitra,"Digital Signal Processing, A Computer Based Approach",4th Edition, McGraw Hill education,2013
2. Oppenheim & schaffer,"Discrete Time Signal Processing ", PHI, 2003.
3. D. GaneshRao and Vineeth P Gejji,"Digital Signal processing" Cengage India Private Limited,2017,ISBN"9386858231

Details for Teaching Aids:

1. Black Board
2. Laptop, PPT,LCD Projector

Course In-charge **Module coordinator** **HOD-ECE** **Principal**

(6)

K S INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Dr. Rekha N

SUBJECT CODE/NAME :18EC53/PRINCIPLES OF COMMUNICATION SYSTEM

YEAR/SEMESTER/SEC : III/V A

ACADEMIC YEAR : 2022-23

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1:Amplitude Modulation, SSB, VSB						
1	Introduction, Time Domain description of AM	L+D	BB	1	1	11/10/22
2	Frequency Domain Description of AM	L+D	BB	1	2	12/10/22
3	Switching modulator, envelope detector	L+ D	BB	1	3	13/10/22
4	Time and frequency domain description of DSBSC	L+D	BB	1	4	14/10/22
5	Ring modulator, coherent detection	L+D	BB	1	5	15/10/22
6	COSTAS Receiver, Quadrature Carrier Multiplexing	L+D	BB	1	6	18/10/22
7	SSB Modulation, VSB Modulation	L+D	BB	1	7	19/10/22
8	Frequency Translation, Frequency Division Multiplexing	L+D	BB	1	8	20/10/22
9	VSB transmission of Analog and Digital Television	L+D	BB	1	9	21/10/22
10	Numericals	L+D	PPT	1	10	25/10/22
11	Numericals	L+D	PPT	1	11	27/10/22
12	Numericals	L+D	PPT	1	12	28/10/22

MODULE 2:Angle Modulation						
13	Basic Definition, Frequency Modulation	L+ D	BB	1	13	29/10/22
14	Narrow Band FM	L+D	BB	1	14	31/10/22
15	Wideband FM	L+D	BB	1	15	2/11/22
16	Transmission Bandwidth of FM signals, Generation of FM signals	L+D	BB	1	16	3/11/22
17	Demodulation of FM Signals	L+D	BB	1	17	4/11/22
18	FM Stereo Multiplexing, PLL	L+D	BB	1	18	8/11/22
19	Non Linear Model of PLL	L+D	BB	1	19	9/11/22
20	Linear model of PLL	L+D	BB	1	20	10/11/22
21	Non Linear Effects in FM, Superheterodyne Receiver	L+D	BB	1	21	12/10/22
22	Numericals	L+D	PPT	1	22	17/11/22
23	Numericals	L+D	PPT	1	23	18/11/22
Module 3: Noise, Noise in Analog Modulation						
24	Shot Noise, Thermal Noise, White Noise	L+D	BB	1	24	22/11/22
25	Noise Equivalent Bandwidth + Numericals	L+D	BB+PPT	1	25	23/11/22
26	Introduction to Noise in Analog Modulation, Receiver Model	L+I	BB	1	26	24/11/22
27	Noise in DSBSC Receivers	L+D	BB	1	27	25/11/22
28	Noise in AM Receivers	L+D	BB	1	28	26/11/22
29	Threshold Effect	L+D	BB	1	29	29/11/22
30	Noise in FM Receivers	L+D	BB	1	30	30/11/22
31	Capture Effect, FM threshold effect	L+D	BB	1	31	1/12/22
32	FM Threshold reduction, Preemphasis in FM	L+D	BB	1	32	2/12/22
33	Deemphasis in FM + Numericals	L+D	BB+PPT	1	33	6/12/22
34	Numericals	L+D	PPT	1	34	7/12/22
Module 4: Sampling and Quatization						
35	Introduction to Sampling and Quantization	L+D	BB	1	35	8/12/22

36	Why digitize analog sources, The low pass sampling process	L+D	BB	1	36	9/12/22
37	Pulse Amplitude Modulation	L+D	BB	1	37	10/12/22
38	Time Division Multiplexing	L+D	BB	1	38	13/12/22
39	Pulse Position Modulation	L+D	BB	1	39	14/12/22
40	Generation of PPM Waves	L+D	BB	1	40	15/12/22
41	Generation of PPM Waves	L+D	BB	1	41	16/12/22
42	Detection of PPM Waves	L+D	BB	1	42	22/12/22
43	Detection of PPM Waves	L+I	BB	1	43	23/12/22
44	Numericals	L+D	PPT	1	44	24/12/22
45	Numericals	L+D	PPT	1	45	27/12/22
	MODULE 5: Sampling and Quatization (Continued)					
46	The Quatization Random Process	L+D	BB	1	46	28/12/22
47	Quantization Noise	L+D	BB	2	48	29 & 30/12/22
48	Pulse Code Modulation: Sampling	L+D	BB	1	49	3/1/23
49	Quantization	L+D	BB	1	50	4/1/23
50	Encoding , Regeneration	L+D	BB	1	51	5/1/23
51	Decoding , Filtering	L+D	BB	1	52	6/1/23
52	Multiplexing	L+D	BB	1	53	10/1/23
53	Delta Modulation	L+D	BB	1	54	11/1//23
54	Video+Mpeg + Numericals	L+D	BB+PPT	1	55	12/1/23
55	Vocoders + Numericals	L+D	BB+PPT	1	56	13/1/23
56	Numericals	L+D	PPT	1	57	17/1/23
57	Revision	L+D	BB	1	58	24/1/23
58	Revision	L+D	BB	1	59	25/1/23
59	Revision	L+D	BB	1	60	27/1/23

Text Books:

1. "Communication Systems", Simon Haykin and Moher, 5th edition, John Willey, India Pvt Ltd, 2010, ISBN 978-81-265-2151-7

Reference Books:

1. Modern Digital and Analog Communication Systems, B P Lathi, Oxford University Press, 4th edition.
2. An Introduction to Analog and Digital Communications, Simon Haykins, John Wiley India Pvt Ltd, 2008, ISBN 978-81-265-3653-5.
3. Principles of Communication Systems, H Taub and D L Schilling, TMH 2011.
4. Communication Systems, Harold P E, Stern Samy, AMahmond, Pearson Edition, 2004.

Web materials:

https://onlinecourses.nptel.ac.in/noc20_ee69/preview

https://www.youtube.com/watch?v=qNSaaRRkEnQ

https://www.youtube.com/watch?v=iS8jmhVAfoQ

Signature of Course Incharge
Dr. Rekha. N.

Signature of Module Coordinator
Dr. P.N. Sudha.

Signature of HOD/ECE
Dr. P.N. Sudha.

KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : BHARGAVI ANANTH

SUBJECT CODE/NAME :18EC54/INFORMATION THEORY AND CODING

SEMESTER/YEAR/SEC : V/ III/A,B

ACADEMIC YEAR : 2022-23

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date (A)	Proposed Date (B)
	Module 1: Module 1: Information Theory						
1	Introduction, Measure of information, numericals	L	BB+P	1	1	10/10/22	10/10/22
2	Information content of message, Average Information content of symbols in Long Independent sequences,	L	BB+P	1	2	11/10/22	11/10/22
3	Numericals	L	BB+P	1	3	13/10/22	12/10/22
4	Numericals	L	BB+P	1	4	14/10/22	14/10/22
5	Extended Source	L	BB+P	1	5	15/10/22	15/10/22
6	Numericals	L	BB+P	1	6	17/10/22	17/10/22
7	Numericals	L	BB+P	1	7	18/10/22	18/10/22
8	Markov Statistical Model	L	BB+P	1	8	20/10/22	19/10/22
9	Numericals	L	BB+P	1	9	21/10/22	21/10/22
10	Numericals	L	BB+P	1	10	27/10/22	28/10/22
	MODULE 2: Source Coding						
11	Encoding of the Source Output	L	BB+P	1	11	28/10/22	29/10/22

12	Numericals	L	BB+P	1	12	31/10/22	31/10/22
13	Shannon's Encoding Algorithm	L	BB+P	1	13	3/11/22	2/11/22
14	Numericals	L	BB+P	1	14	4/11/22	4/11/22
15	Shannon Fano Encoding Algorithm	L	BB+P	1	15	7/11/22	7/11/22
16	Numericals	L	BB+P	1	16	8/11/22	8/11/22
17	Source coding theorem, Prefix Codes	L	BB+P	1	17	10/11/22	9/11/22
18	Numericals	L	BB+P	1	18	12/11/22	12/11/22
19	Kraft McMillan Inequality property	L	BB+P	1	19	17/11/22	18/11/22
20	Huffman	L		1	20	18/11/22	21/11/22
	MODULE 3:Information Channels						
21	Communication Channels, Discrete Communication channels	L	BB+P	1	21	21/11/22	22/11/22
22	Numericals	L	BB+P	1	22	22/11/22	26/11/22
23	Channel Matrix, Joint probabilty Matrix	L	BB+P	1	23	28/11/22	28/11/22
24	Numericals	L	BB+P	1	24	29/11/22	29/11/22
25	Binary Symmetric Channel, System Entropies	L	BB+P	1	25	1/12/22	30/11/22
26	Numericals	L	BB+P	1	26	2/12/22	2/12/22
27	Mutual Information, Channel Capacity	L	BB+P	1	27	5/12/22	5/12/22
28	Numericals	L	BB+P	1	28	6/12/22	6/12/22
29	Channel Capacity of Binary Symmetric Channel, Binary Erasure Channel	L	BB+P	1	29	8/12/22	7/12/22
30	Numericals, Muroga,s Theorem	L	BB+P	1	30	9/12/22	9/12/22
	MODULE 4:Error Control Coding						
31	Introduction, Examples of Error control coding, methods of Controlling Errors	L	BB+P	1	31	10/12/22	10/12/22
32	Types of Errors, types of Codes, Linear Block Codes: matrix description of Linear Block Codes	L	BB+P	1	32	12/12/22	12/12/22
33	Error detection & Correction capabilities of Linear Block Codes	L	BB+P	1	33	13/12/22	13/12/22
34	Numericals	L	BB+P	1	34	15/12/22	14/12/22

35	Numericals	L	BB+P	1	35	16/12/22	16/12/22
36	Single error correction Hamming code	L	BB+P	1	36	22/12/22	23/12/22
37	Numericals	L	BB+P	1	37	23/12/22	24/12/22
38	Table lookup Decoding using Standard Array, Numericals	L	BB+P	1	38	26/12/22	26/12/22
39	Algebraic Structure of Cyclic Codes, Encoding using an (n-k) Bit Shift register, Syndrome Calculation, Error Detection and Correction	L	BB+P	1	39	27/12/22	27/12/22
40	Numericals	L	BB+P	1	40	29/12/22	28/12/22
Module 5: Convolution Codes							
41	Convolution Encoder	L	BB+P	1	41	30/12/22	30/12/22
42	Numericals	L	BB+P	1	42	31/12/22	31/12/22
43	Time domain approach	L	BB+P	1	43	2/1/23	2/1/23
44	Numericals	L	BB+P	1	44	3/1/23	3/1/23
45	Transform domain approach	L	BB+P	1	45	5/1/23	4/1/23
46	Numericals	L	BB+P	1	46	6/1/23	6/1/23
47	Code Tree, Trellis and State Diagram	L	BB+P	1	47	9/1/23	9/1/23
48	Numericals	L	BB+P	1	48	10/1/23	10/1/23
49	Numericals	L	BB+P	1	49	12/1/23	11/1/23
50	Viterbi Algorithm	L	BB+P	1	50	13/1/23	13/1/23
51	Numericals	L	BB+P	1	51	16/1/23	16/1/23
52	Numericals	L	BB+P	1	52	17/1/23	17/1/23

Signature of Course Incharge **Signature of Module Coordinator** **Signature of HOD**

SIGNATURE OF PRINCIPAL

KS INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

NAME OF THE STAFF : Kavya B M

SUBJECT CODE/NAME : 18EC55/Electromagnetic waves

SEMESTER/YEAR : V 'B'/ III

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Offline Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	MODULE 1					
1	Revision of Vector Calculus	L+D	BB	1	1	10.10.2022
2	Revision of Vector Calculus	L+D	BB	1	2	11.10.2022
3	**Coulomb's Law, Electric Field Intensity and Flux density:** Introduction	L+D	BB	1	3	13.10.2022
4	Experimental law of Coulomb	L+D	BB	1	4	14.10.2022
5	Coulombs law	L+D	BB	1	5	15.10.2022
6	Electric Field intensity	L+D	BB	1	6	17.10.2022
7	Field due to continuous volume charge distribution	L+D	BB	1	7	18.10.2022
8	Field of a line charge	L+D	BB	1	8	20.10.2022
9	Field due to infinite sheet of charge	L+D	BB	1	9	21.10.2022
10	Electric flux density		BB	1	10	25.10.2022
11	Problems on Electric filed intensity	L+PS	BB	1	11	27.10.2022
12	Problems on volume integral	L+PS	BB	1	12	28.10.2022
13	Problems on Electric Flux density	L+PS	BB	1	13	31.10.2022

	MODULE 2					
14	**Gauss's law and Divergence:** Gauss Law	L+ D	BB	1	14	3.11.2022
15	Application of Gauss Law to a point charge and line charge.	L+D	BB	1	15	4.11.2022
16	Application of Gauss law to surface charge and volume charge	L+D	BB	1	16	7.11.2022
17	Point form of Gauss Law	L+D	BB	1	17	8.11.2022
18	Divergence	L+D	BB	1	18	10.11.2022
19	Maxwell's First equation (Electrostatics),	L+D	BB	1	19	12.11.2022
20	Vector Operator and divergence theorem.		BB	1	20	17.11.2022
21	Energy expended in moving a point charge in an electric field	L+D	BB	1	21	18.11.2022
22	The line integral	L+D	BB	1	22	21.11.2022
23	Definition of potential difference and potential,	L+D	BB	1	23	22.11.2022
24	The potential field of point charge, potential gradient	L+D	BB	1	24	24.11.2022
25	Current and Current density, Continuity of current.	L+PS	BB	1	25	25.11.2022
26	Problems on Maxwell's equations	L+PS	BB	1	26	28.11.2022
27	Problems on energy	L+PS	BB	1	27	29.11.2022
	MODULE 3					
28	**Poisson's and Laplace's Equation:** Derivation of Poisson's and Laplace's Equations.	L+D	BB	1	28	01.12.2022
29	Uniqueness theorem.	L+D	BB	1	29	02.12.2022
30	Examples of the solution of Laplace's equation.	L+D	BB	1	30	05.12.2022
31	Numerical problems on Laplace Equation	L+PS	BB	1	31	06.12.2022
32	**Steady Magnetic Field** Biot-Savart Law, Ampere's circuital law	L+D	BB	1	32	08.12.2022
33	Curl, Stokes' theorem, Magnetic flux and magnetic flux density	L+D	BB	1	33	09.12.2022

34	Scalar and Vector Magnetic Potentials.	L+D	BB	1	34	10.12.2022
35	Problems on Poison's equation	L+PS	BB	1	35	12.12.2022
36	Problems on Laplace equations	L+PS	BB	1	36	13.12.2022
37	Problems on applications of Amperes Circuital law.	L+PS	BB	1	37	15.12.2022
38	Problems on applications of Amperes Circuital law	L+PS	BB	1	38	16.12.2022
	MODULE 4					
39	**Magnetic Forces** Force on a moving charge, differential current elements	L+D	BB	1	39	22.12.2022
40	Force between differential current elements.	L+D	BB	1	40	23.12.2022
41	Numerical Problems	L+PS	BB	1	41	26.12.2022
42	**Magnetic Materials** Magnetization and permeability,	L+D	BB	1	42	27.12.2022
43	Magnetic boundary conditions, Magnetic circuit.	L+D	BB	1	43	29.12.2022
44	Potential Energy and forces on magnetic materials.	L+D	BB	1	44	30.12.2022
45	Inductance and mutual reactance.	L+D	BB	1	45	31.12.2022
46	Numerical Problems	L+PS	BB	1	46	02.01.2023
47	Faraday's law of electromagnetic induction – integral and point form	L+D	BB	1	47	03.01.2023
48	Numerical Problems	L+PS	BB	1	48	05.01.2023
	MODULE 5					
49	**Maxwell's equations :** Continuity equation	L+D	BB	1	49	06.01.2023
50	Inconsistency of Ampere's law with continuity equation, displacement current, conduction current	L+D	BB	1	50	09.01.2023
51	Maxwell's equations in point form and integral integral form.	L+D	BB	1	51	10.01.2023
52	Maxwell's equations for different media	L+D	BB	1	52	12.01.2023
53	**Uniform Plane Wave:** Plane wave, Uniform plane wave, Derivation of plane wave equations from Maxwell's equations	L+D	BB	1	53	13.01.2023
54	Solution of wave equation for perfect dielectric, Relation between E and H	L+D	BB	1	54	16.01.2023

55	Wave propagation in free space, solution of wave equation of wave equation for sinusoidal excitation	L+D	BB	1	55	17.01.2022
56	Wave propagation in any conducting media and good conductors, Skin effect or depth of penetration	L+D	BB	1	56	23.01.2022
57	Poynting theorem and Wave power	L+D	BB	1	57	24.01.2022
58	Numerical Problems	L+PS	BB	1	58	27.01.2022

TEXT BOOK:

1. W.H. Hayt and J.A. Buck, "Engineering Electromagnetics", 8th Edition, Tata McGraw-Hill, ISBN-978-0-07-061223-5.

REFERENCES:

1. Elements of Electromagnetics- Matthew N.O., Sadiku, Oxford university press,4th Edn.
2. Electromagnetic Waves and Radiating systems- E.C Jordan and K.G. Balmain, PHI, 2nd Edn.
3. Electromagnetics-Joseph Edminister, Schaum Outline Series, McGraw Hill.
4. Fundamentals of Electromagnetics for Engineering – N. Narayana Rao, Pearson.

WEB MATERIALS:

1. https://nptel.ac.in/courses/108106073/
2. https://freevideolectures.com/course/2340/electromagnetic-fields
3. https://www.khanacademy.org/science/physics/.../v/discovery-of-electromagnetism
4. https://www.quora.com/Are-there-any-good-online-video-course-sites-for-learning

Signature of Course In-charge **Signature of Module Coordinator** **Signature of HOD-ECE**

(5)

K S INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF ELECRONICS & COMMUNICATION ENGINEERING

COURSE PLAN

NAME OF THE STAFF : Dr. B Sudarshan
COURSE CODE/NAME : 18EC56/VERILOG HDL
SEMESTER/YEAR : V / III (A & B sections)
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be Covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date	
	MODULE 1: Overview of Digital Design with Verilog HDL & Hierarchical Modeling Concepts					**A Section**	**B Section**
1.	Evolution of CAD, emergence of HDLs	L+D	BB	1	1	10/10/2022	10/10/2022
2.	Typical HDL-flow	L+D	BB	1	2	11/10/2022	12/10/2022
3.	why Verilog HDL? Trends in HDLs	L+D	BB	1	3	12/10/2022	13/10/2022
4.	Top-down and bottom-up dcsignmcthodology	L+D	BB	2	5	13/10/2022 17/10/2022	14/10/2022 15/10/2022
5.	Differences between modules andmodule instances	L+D	BB	1	6	18/10/2022	17/10/2022
6.	Parts of a simulation, Design block	L+D	BB	1	7	19/10/2022	19/10/2022
7.	Stimulus block., Examples	L+D	BB	1	8	20/10/2022	20/10/2022
	MODULE 2: Basic Concepts, Modules and Ports						
8.	Lexical conventions	L+ D	BB	1	9	27/10/2022	21/10/2022
9.	Data types	L+D	BB	1	10	29/10/2022	27/10/2022
10.	Data types	L+D	BB	1	11	31/10/2022	28/10/2022
11.	System tasks	L+D	BB	1	12	2/11/2022	29/10/2022
12.	Compiler directives	L+D	BB	1	13	27/10/2022	31/10/2022
13.	Compiler directives, examples	L+D	BB	1	14	3/11/2022	2/11/2022
14.	Module definition	L+D	BB	1	15	7/11/2022	3/11/2022

15.	Port declaration	L+D	BB	1	16	8/11/2022	4/11/2022
16.	Connecting ports	L+D	BB	1	17	9/11/2022	7/11/2022
17.	Hierarchical name referencing	L+D	BB	1	18	10/11/2022	9/11/2022
	MODULE 3: Gate-Level Modeling & Dataflow Modeling						
18.	Modeling using basic Verilog gateprimitives	L+D	BB	1	19	12/11/2022	10/11/2022
19.	Description of and/or and buf/not typeGates	L+D	BB	1	20	17/11/2022	17/11/2022
20.	Description of and/or and buf/not typeGates	L+D	BB	1	21	21/11/2022	18/11/2022
21.	Risc, Fall and Turn-off delays	L+D	BB	1	22	22/11/2022	21/11/2022
22.	min, max and typical delays	L+D	BB	1	23	26/11/2022	28/11/2022
23.	Continuous assignments	L+D	BB	1	24	28/11/2022	30/11/2022
24.	Delay specification, Expressions	L+D	BB	1	25	29/11/2022	1/12/2022
25.	Operators, Operands, Operator types.	L+D	BB	1	26	30/11/2022	2/12/2022
26.	Examples	L+D	BB	1	27	1/12/2022	5/12/2022
	MODULE 4: Behavioral Modeling						
27.	Structured procedure, initial statement	L+D	BB	1	28	5/12/2022	7/12/2022
28.	always statement	L+D	BB	1	29	6/12/2022	8/12/2022
29.	blocking and non-blocking statements	L+D	BB	1	30	7/12/2022	9/12/2022
30.	delay control, generate statement	L+D	BB	1	31	8/12/2022	12/12/2022
31.	conditional statements, multiwaybranching	L+D	BB	1	32	10/12/2022	14/12/2022
32.	loops-while loop, for loop	L+D	BB	1	33	12/12/2022	15/12/2022
33.	loops-Repeat, forever	L+D	BB	1	34	13/12/2022	16/12/2022
34.	sequential and parallel blocks	L+D	BB	1	35	14/12/2022	22/12/2022
35.	Examples	L+D	BB	1	36	22/12/2022	23/12/2022
	MODULE 5: Useful Modeling Techniques:						
36.	Procedural continuous assignments	L+D	BB	1	37	24/12/2022	24/12/2022
37.	overriding parameters	L+D	BB	1	38	26/12/2022	26/12/2022
38.	conditional compilation and execution	L+D	BB	1	39	27/12/2022	28/12/2022
39.	useful system tasks	L+D	BB	1	40	28/12/2022	29/12/2022

40.	**Logic Synthesis with Verilog:** LogicSynthesis	L+D	BB	1	41	29/12/2022	309/12/2022
41.	Impact of logic synthesis	L+D	BB	1	42	31/12/2022	31/12/2022
42.	Verilog HDL Synthesis.	L+D	BB	1	43	2/1/2023	2/1/2023
43.	Verilog HDL Synthesis.	L+D	BB	1	44	3/1/2023	4/1/2023
44.	Verilog HDL Synthesis.	L+D	BB	1	45	4/1/2023	5/1/2023
45.	Synthesis design flow	L+D	BB	1	46	5/1/2023	6/1/2023
46.	Synthesis design flow	L+D	BB	1	47	9/1/2023	9/1/2023
47.	Synthesis design flow	L+D	BB	1	48	10/1/2023	11/1/2023
48.	Verification of Gate-Level Netlist	L+D	BB	1	49	11/1/2023	12/1/2023
49.	Verification of Gate-Level Netlist	L+D	BB	1	50	12/1/2023	13/1/2023
50	Revision	L+D	BB	1	51	16/1/2023	16/1/2023
51.	Revision	L+D	BB	1	52	17/1/2023	27/1/2023

Signature of Course In charge

Signature of Module Coordinator

Signature of HOD

K S INSTITUTE OF TECHNOLOGY BANGALORE-560109

DEPARTMENT OF ELECRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Dr.Dinesh Kumar D S
SUBJECT CODE/NAME : 18EC71/COMPUTER NETWORKS
SEMESTER/YEAR/SEC : VII / A
ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	Module 1					
1	Introduction: Data Communications: Components, Representations,	L+D	BB+PPT	1	1	19/09/22
2	Data Flow, Networks Physical Structures,	L+D	BB+PPT	1	2	20/09/22
3	Network Types: LAN, WAN,	L+ D	BB+PPT	1	3	22/09/22
4	Switching, Internet		BB+PPT		4	23/09/22
5	Protocol Layering: Scenarios, Principles, Logical Connections	L+ D	BB+PPT	1	5	26/09/22
6	TCP/IP Protocol Suite: Layered Architecture, Layers in TCP/IP suite.	L+D	BB+PPT	1	6	27/09/22
7	Description of layers	L+ D	BB+PPT	1	7	29/09/21
8	Encapsulation and Decapsulation, Addressing, Multiplexing and Demultiplexing,	L+AV	BB+PPT	1	8	30/09/22
9	The OSI Model: OSI Versus TCP/IP	L+D	BB+PPT	1	9	03/10/22
	Module2					
10	**Data-Link Layer:** Introduction: Nodes and Links, Services, Categories of link	L+D	BB+PPT	1	10	06/10/22
11	Sublayers, Link Layer addressing: Types of addresses	L+ D	BB+PPT	1	11	07/10/22
12	ARP	L+D	BB+PPT	1	12	10/10/22
13	**Data Link Control (DLC) services:** Framing, Flow and Error Control	L+D	BB+PPT	1	13	11/10/22
14	Data Link Layer Protocols: Simple Protocol	L+D	BB+PPT	1	14	13/10/22
15	Stop and Wait protocol, Piggybacking	L+D	BB+PPT	1	15	14/10/22
16	Media Access Control: Random Access: Pure ALOHA ,slotted ALOHA	L+ D	BB+PPT	1	16	15/10/22
17	CSMA, CSMA/CD, CSMA/CA	L+ D	BB+PPT	1	17	20/10/22
18	**Wired and Wireless LANs:** Ethernet Protocol,	L+D	BB+PPT	1	18	21/10/22

19	Standard Ethernet	L+D	BB+PPT	1	19	25/10/22
20	Introduction to wireless LAN: Architectural Comparison, Characteristics, Access Control	L+D	BB+PPT	1	20	27/10/22
	Module 3					
21	**Network Layer:** Introduction, Network Layer services: Packetizing.	L+D	BB+PPT	1	21	28/10/22
22	Routing and Forwarding, Other services	L+D	BB+PPT	1	22	31/10/22
23	Packet Switching: Datagram Approach, Virtual Circuit Approach	L+D	BB+PPT	1	23	3/11/22
24	IPV4 Addresses: Address Space, Classful Addressing	L+D	BB+PPT	1	24	4/11/22
25	Classless Addressing	L+D	BB+PPT	1	25	7/11/22
26	DHCP, Network Address Resolution		BB+PPT		26	8/11/22
27	Forwarding of IP Packets: Based on destination Address, Based and Label	L+D	BB+PPT	1	27	10/11/22
28	Network Layer Protocols: Internet Protocol (IP): Datagram Format	L+D	BB+PPT	1	28	12/11/22
29	Options, Security of IPv4 Datagrams	L+D	BB+PPT	1	29	14/11/22
30	Unicast Routing: Introduction Routing Algorithms: Distance Vector Routing	L+D	BB+PPT	1	30	15/11/22
31	Link State Routing, Path vector routing	L+D	BB+PPT	1	31	17/11/22
	Module 4					
32	**Transport Layer:** Introduction: Transport Layer Services,Connectionless and Connection oriented Protocols	L+D	BB+PPT	1	32	18/11/22
33	Transport Layer Protocols: Simple protocol	L+D	BB+PPT	1	33	24/11/22
34	Stop and wait protocol,Go-Back-N Protocol	L+D	BB+PPT	1	34	25/11/22
35	,Selective repeat protocol	L+D	BB+PPT	1	35	28/11/22
36	User Datagram Protocol: User DatagramUDP Services	L+D	BB+PPT	1	36	29/11/22
37	Transmission Control Protocol: TCP Services, Features	L+D	BB+PPT	1	37	1/12/22
38	Segments, TCP connection	L+D	BB+PPT	1	38	2/12/22
39	State Transition diagram, Windows in TCP	L+D	BB+PPT	1	39	5/12/22
40	Flow control, Error control, TCP congestion control	L+D	BB+PPT	1	40	6/12/22
	Module 5					
41	Application Layer: Introduction: providing services	L+D	BB+PPT	1	41	8/12/22
42	Application- layer paradigms,	L+D	BB+PPT	1	42	9/12/22
43	Standard Client -Server Protocols: WWW, Hyper Text Transfer Protocol,	L+D	BB+PPT	1	43	10/12/22
44	FTP: Two connections, Control Connection, Data Connection	L+D	BB+PPT	1	44	12/12/22
45	Electronic Mail: Architecture	L+D	BB+PPT	1	45	13/12/22
46	Wed Based Mail	L+D	BB+PPT	1	46	15/12/22

47	Telnet: Local versus remote logging.	L+D	BB+PPT	1	47	16/12/22
48	Domain Name system: Name space,DNS in internet,	L+D	BB+PPT	1	48	19/12/22
49	Resolution, DNS Messages	L+D	BB+PPT	1	49	20/12/22
50	Registrars, DDNS, Security of DNS	L+D	BB+PPT	1	50	26/12/22
51	Revision	L+D	BB+PPT	1	51	27/12/22
52	Revision	L+D	BB+PPT	1	52	31/12/22

TEXTBOOK:

T1: Data Communications and Networking, Forouzan, 5th Edition, McGraw Hill, 2016 ISBN: 1-25-906475-3.

REFERENCES:

R1: Computer Networks, James J Kurose, Keith W Ross, Pearson Education, 2013, ISBN: 0-273-76896.

R2: Introduction to Data Communication and Networking, WayarlesTomasi, Pearson Education, 2007, ISBN: 0130138282.

WEB MATERIALS:

W1: https://nptel.ac.in/courses/106/105/106105183/

W2: https://nptel.ac.in/courses/106/105/106105081/

W3: https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-829-computer-networks-fall-2002/lecture-notes/

Course Incharge **Module Coordinator** **HOD ECE** **Principal**

K S INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF ELECRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Praveen A

SUBJECT CODE/NAME : 18EC72/VLSI Design

SEMESTER/YEAR/SEC : VII /IV/A

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction & MOS Transistor Theory						
1	A Brief History	L+I	LCD	1	1	19-09-22
2	MOS Transistors, CMOS Logic	L+D	BB	1	2	20-09-22
3	CMOS Logic	L+D	BB	1	3	21-09-22
4	Introduction to MOS Transistor Theory	L+D	BB	1	4	23-09-22
5	Long channel I-V Characteristics	L+ I	BB, LCD	1	5	26-09-22
6	Long channel I-V Characteristics	L+I	BB, LCD	1	6	27-09-22
7	Non-ideal I-V Effects	L+D	BB	1	7	28-09-22
8	Non-ideal I-V Effects	L+D	BB	1	8	30-09-22
9	Non-ideal I-V Effects	L+D	BB	1	9	01-10-22
10	DC Transfer Characteristics	L+I	BB, LCD	1	10	03-10-22
11	DC Transfer Characteristics	L+I	BB, LCD	1	11	07-10-22
12	DC Transfer Characteristics	L+I	BB, LCD	1	12	10-10-22

MODULE 2: Fabrication and MOSFET Scaling						
13	CMOS Fabrication using N-well	L+ I	BB+LCD	1	13	11-10-22
14	CMOS Fabrication using N-well	L+I	BB+LCD	1	14	12-10-22
15	Basic Layout concepts	L+ I	BB+LCD	1	15	14-10-22
16	Basic Layout concepts	L+ I	BB+LCD	1	16	15-10-22
17	VLSI Design Flow	L+D	BB	1	17	17-10-22
18	Introduction to Fabrication Process	L+I	BB, LCD	1	18	18-10-22
19	CMOS Technologies	L+ I	BB+LCD	1	19	19-10-22
20	CMOS Technologies	L+ I	BB+LCD	1	20	21-10-22
21	CMOS Technologies	L+ I	BB+LCD	1	21	25-10-22
22	Layout Design Rules	L+ I	BB+LCD	1	22	28-10-22
23	Layout Design Rules	L+ I	BB+LCD	1	23	29-10-22
24	MOSFET Scaling and Small-Geometry Effects	L+D	BB	1	24	31-10-22
25	MOSFET Scaling and Small-Geometry Effects	L+D	BB	1	25	02-11-22
26	MOSFET Capacitances	L+D	BB	1	26	04-11-22
27	MOSFET Capacitances	L+D	BB	1	27	07-11-22
MODULE 3: Delay and Combinational Circuit Design						
28	Introduction to Delay concept	L+D	BB	1	28	08-11-22
29	Transient Response	L+D	BB	1	29	12-11-22
30	Transient Response	L+D	BB	1	30	14-11-22
31	RC Delay Model	L+D	BB	1	31	15-11-22
32	RC Delay Model	L+D	BB	1	32	16-11-22
33	Linear Delay Model	L+I	BB	1	33	18-11-22
34	Linear Delay Model	L+D	BB	1	34	21-11-22
35	Logical Efforts of Paths	L+D	BB	1	35	22-11-22
36	Logical Efforts of Paths	L+D	BB	1	36	23-11-22
37	Introduction to combinational circuit design	L+D	BB	1	37	25-11-22
38	Circuit families	L+I	LCD	1	38	26-11-22
39	Circuit families	L+I	LCD	1	39	28-11-22
40	Circuit families	L+I	LCD	1	40	29-11-22

MODULE 4: Sequential Circuit Design and Dynamic Logic Circuits						
41	Introduction to sequential circuit design	L+D	BB	1	41	30-11-22
42	Circuit Design for Latches	L+D	BB	1	42	02-12-22
43	Circuit Design for Latches	L+D	BB	1	43	05-12-22
44	Circuit Design for Flip-Flops	L+D	BB	1	44	06-12-22
45	Circuit Design for Flip-Flops	L+D	BB	1	45	07-12-22
46	Introduction Dynamic circuit design	L+D	BB	1	46	09-12-22
47	Basic Principles of Pass Transistor Circuits	L+D	BB	1	47	10-12-22
48	Synchronous Dynamic Circuit Techniques	L+D	BB	1	48	12-12-22
49	Dynamic CMOS Circuit Techniques				49	13-12-22
MODULE 5: Semiconductor Memories & Testing and Verification						
50	Introduction to Semiconductor Memories	L+D	BB	1	50	14-12-22
51	Dynamic Random-Access Memory	L+D	BB	1	51	16-12-22
52	Static Random-Access Memory	L+D	BB	1	52	19-12-22
53	Introduction Testing and Verification	L+D	BB	1	53	20-12-22
54	Logic Verification Principles	L+D	BB	1	54	21-12-22
55	Manufacturing Test Principles	L+D	BB	1	55	23-12-22
56	Design for testability	L+D	BB	1	56	24-12-22
57	Revision	L+I	LCD	1	57	26-12-22

Signature of Course In charge **Signature of Module Coordinator** **Signature of HOD ECE**

K S INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

COURSE PLAN ODD SEM-2022-23

NAME OF THE STAFF : Mrs. POOJA S

SUBJECT CODE/NAME : 18EC732/ SATELLITE COMMUNICATION

SEMESTER/SEC : VII SEM / A

ACADEMIC YEAR : 2022-2023

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	MODULE -1: SATELLITE ORBITS & TRAJECTORIES					
1	Satellite Orbits and Trajectories: Definition	L+AV	BB	1	1	20/09/2022
2	Basic Principles	L+ D	LCD +BB	1	2	21/09/2022
3	Orbital Parameters	L+ D	LCD +BB	1	3	22/09/2022
4	Injection Velocity and satellite Trajectory	L+D	LCD +BB	1	4	23/09/2022
5	Types of satellite orbits	L+D	LCD +BB	1	5	27/09/2022
6	Orbital perturbations	L+D	LCD +BB	1	6	28/09/2022
7	Satellite stabilization	L+D	LCD +BB	1	7	29/09/2022
8	Orbital effects on satellite's performance	L+D	LCD +BB	1	8	30/09/2022
9	Eclipses, Look angles: Azimuth and Elevation angles	L+D	BB	1	9	06/10/2022
	MODULE -2: SATELLITE SUBSYSTEM & EARTH STATION					
10	Satellite Power supply subsystem	L+ D	BB	1	12	07/10/2022
11	Attitude and Orbit control	L+D	LCD +BB	1	13	11/10/2022
12	Tracking, Telemetry and command subsystem	L+D, PS	LCD +BB	1	14	12/10/2022

13	Types of earth station	L+D, PS	LCD +BB	1	15	13/10/2022
14	Architecture	L+D, PS	LCD +BB	1	16	14/10/2022
15	Design considerations, Testing	L+D, PS	LCD +BB	1	17	20/10/2022
16	Earth Station Hardware	L+D, PS	LCD +BB	1	18	21/10/2022
17	Satellite tracking	L+D	LCD +BB	1	19	25/10/2022
	MODULE -3: MULTIPLE ACCESS TECHNIQUES & SATELLITE LINK DESIGN					
18	Introduction to Multiple Access Techniques	L+D	BB	1	23	02/11/2022
19	FDMA (No Derivation)	L+D	LCD +BB	1	24	03/11/2022
20	SCPC Systems	L+D	LCD +BB	1	25	04/11/2022
21	TDMA, CDMA, SDMA	L+D	LCD +BB	1	26	08/11/2022
22	Satellite link design fundamentals	L+D	LCD +BB	1	27	09/11/2022
23	Transmission Equation	L+D	LCD +BB	1	28	10/11/2022
24	Satellite Link Parameters	L+D	LCD +BB	1	29	15/11/2022
25	Propagation considerations	L+D	LCD +BB	1	30	16/11/2022
	MODULE -4: COMMUNICATION SATELLITES					
26	Introduction to Communication Satellites	L+AV	BB	1	33	17/11/2022
27	Related Applications	L+D	LCD +BB	1	34	18/11/2022
28	Frequency Bands, Payloads	L+D	LCD +BB	1	35	24/11/2022
29	Satellite vs Terrestrial networks	L+D	LCD +BB	1	36	25/11/2022
30	Satellite Telephony	L+D	LCD +BB	1	37	29/11/2022
31	Satellite Television	L+D	LCD +BB	1	38	30/11/2022
32	Satellite Radio	L+D	LCD +BB	1	39	01/12/2022
33	Regional Satellite Systems	L+D	LCD +BB	1	40	02/12/2022
34	National Satellite Systems	L+D	BB	1	41	06/12/2022
	MODULE -5: REMOTE SENSING, WEATHER FORECASTING & NAVIGATION SATELLITES					
35	Classification of Remote Sensing Systems	L+AV	BB	1	44	07/12/2022
36	Orbits, Payloads	L+D	LCD +BB	1	45	08/12/2022
37	Types of images: Image classification	L+D	LCD +BB	1	46	09/12/2022

38	Interpretation, Applications	L+D	LCD +BB	1	47	13/12/2022
39	Fundamentals of weather forecasting satellites	L+D	LCD +BB	1	48	14/12/2022
40	Images, Orbits, Payloads, Applications	L+D	LCD +BB	1	49	15/12/2022
41	Development of Satellite Navigation Systems	L+D	LCD +BB	1	50	16/12/2022
42	GPS system, Applications	L+D	LCD +BB	1	51	20/12/2022
43	VTU QP Revision	L+D	BB	1	52	21/12/2022
44	VTU QP Revision	L+D	BB	1	53	27/12/2022
45	VTU QP Revision	L+D	BB	1	54	31/12/2022

Text Book:

"Communication Systems", Simon Haykins & Moher, 5th Edition, John Willey, India Pvt. Ltd, 2010, ISBN 978 – 81 – 265 – 2151 – 7.

Reference Books:

1. Modern Digital and Analog Communication Systems, B. P. Lathi, Oxford University Press., 4th edition.
2. An Introduction to Analog and Digital Communication, Simon Haykins, John Wiley India Pvt. Ltd., 2008, ISBN 978–81–265–3653–5.
3. Principles of Communication Systems, H. Taub & D.L. Schilling, TMH,2011.
4. Communication Systems, Harold P.E, Stern Samy and A. Mahmond, Pearson Edition, 2004.

Course In charge

Module Coordinator

ECE - HOD

K.S. INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : **Dr P N SUDHA**

SUBJECT CODE/NAME : **18EC744/CRYPTOGRAPHY**

SEMESTER/YEAR : **VII/ IV/A**

ACADEMIC YEAR : **2022-2023**

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: CLASSICAL ENCRYPTION TECHNIQUES & BASIC CONCEPTS OF NUMBER THEORY & FINITE FILELDS						
1	Symmetric cipher model, Substitution tcchniques	L+I	LCD	4	4	19th Sep to 22nd Sep2022
2	Transposition techniques	L+D, PS	BB	1	5	26th Sep
3	Euclidean algorithm	L+ D, PS	BB	8	13	27th Sep to 6th Oct 2022
4	Modular arithmetic	L+D	BB	2	15	10th Oct to 11th Oct 2022
5	Pedagogy		LCD	1	16	12th Oct 2022
	MODULE 2: SYMMETRICAL CIPHERS					
6	SYMMETRIC CIPHERS: Traditional Block Cipher structure	L+D	BB	2	18	12th Oct 2021 to 13th Oct2022
7	Data Encryption Standard (DES)	L+D	BB	3	21	15th Oct2021 to 20th Oct2022
8	The AES Cipher	L+D	BB	2	23	25th Oct2021 to 27th Oct2022
9	Pedagogy		LCD			31th Oct2022
	MODULE 3: BASIC CONCEPTS OF NUMBER & FINITE FIELDS					
10	Groups, Rings and Fields, Finite fields of the form GF(p)	L+D	BB	1	24	2nd Nov 2022

11	Prime numbers	L+D	BB	2	26	4th Nov to 7th Nov 2022
12	Fermat's theorem,	L+D	BB	1	27	8thNov2021
13	Euler's theorem,	L+D	BB	1	28	9th Nov 2021
14	Discrete Logarithm	L+D	BB	1	29	10th Nov 2021
15	Pedagogy activity		LCD	1	30	12th Nov 2021
	MODULE 4: ASYMMETRIC CIPHER					
16	Principle of public Key cryptosystem	L+D, PS	BB	2	32	14th Nov 2022 to 15th Nov 2022
17	Principles of Public-Key Cryptosystems: The RSA algorithm	L+D, PS	BB	2	34	16th Nov 2022 to 17th Nov 2022
18	Diffie - Hellman Key Exchange	L+D	BB	3	37	24th Nov 2022 to 28th Nov 2022
19	Elliptic Curve Arithmetic,	L+D	BB	3	40	29th Nov 2022 to 2nd Dec 2022
20	Elliptic Curve Cryptography	L+D	BB	3	43	5th Dec 2022 to 7th Dec 2022
21	Pedagogy activity		LCD	1	44	5th Dec 2022 to 7th Dec 2022
	MODULE 5: PSEUDO-RANDOM-SEQUENCE GENERATORS AND STREAM CIPHERS					
22	Linear Feedback Shift Registers	L+D, PS	BB	1	45	8th Dec 2022
23	Design and analysis of stream ciphers	L+D	BB	1	46	10th Dec 2022
24	Design & analysis of Stream ciphers using LFSRs	L+D	BB	2	48	12th Dec 2022 to 13th Dec 2022
25	A5 algorithm	L+D	BB	1	49	14th Dec 2022
26	Hughes XPD/KPD	L+D	BB	1	50	15th Dec 2022
27	Nanotequ	L+D	BB	1	51	19th Dec 2022
28	Additive generators	L+D	BB	1	52	19th Dec 2022
29	Gifford generator	L+D	BB	1	53	20th Dec 2022
30	PKZIP	L+D	BB	1	54	21stDec 2022
31	Pedagogy activity	L+D	LCD	1	55	26th Dec 2022
32	Revision	L+D	BB, LCD	4	59	27th Dec 2022
33	Revision	L+D	BB, LCD	2	61	27th Dec 2022
34	Revision	L+D	BB, LCD	1	62	27th Dec 2022

Text Books:

- William Stallings , "Cryptography and Network Security Principles and Practice", Pearson Education Inc., 6th Edition, 2014, ISBN: 978-93-325-1877-3
- Bruce Schneier, "Applied Cryptography Protocols, Algorithms, and Source code in C", Wiley Publications, 2nd Edition, ISBN: 9971-51-348-X

Reference Books:

- Understanding Cryptography - A Textbook for Students and Practitioners, Paar, Christof, Pelzl, Jan, Springer (2010).
- Cryptography Engineering: Design Principles and Practical Applications, Niels Ferguson, Bruce Schneier, Tadayoshi Kohno, Wiley (2010).
- Cryptography: Theory and Practice, Third Edition, Douglas R. Stinson, CRC Press (2005).
- Cryptography: A Very Short Introduction, Fred C. Piper; Sean Murphy, Oxford University Press (2002)..

WEB MATERIALS:

- https://learncryptography.com/
- www.cryptolab.us/
- https://cryptopals.com

Details for the teaching Aids

1. BB
2.LCD

19/9

Signature of Course In charge

19/9

Signature of Module Coordinator

19/9

Signature of HOD

K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
LESSON PLAN 2022-23 ODD SEMESTER

COURSE INCHARGE : Dr. Surekha Borra
COURSE CODE/TITLE : 18ME751
YEAR/ SEMESTER/SECTION : IV/ VII/A
BRANCH : ECE

	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
	Module 1: Basic Introduction to Energy					
1	Energy and power, forms of energy, primary energy sources, energy flows	L+D	BB+PPT	1	1	19/9/22
2	World energy production and consumption	L+D	BB+PPT	1	2	21/9/22
3	Key energy trends in India: Demand,	L+ D	BB+PPT	1	3	22/9/22
4	Electricity	L+D	BB+PPT	1	4	23/9/22
5	Access to modern energy	L+D	BB+PPT	1	5	26/9/22
6	Energy production and trade	L+D	BB+PPT	1	6	28/9/22
7	Factors affecting India's energy development	L+ D	BB+PPT	1	7	29/9/22
8	Economy and demographics, Policy and institutional framework	L+D	BB+PPT	1	8	30/9/22
9	Energy prices and affordability	L+D	BB+PPT	1	9	1/10/22
10	Social and environmental aspects, Investment	L+D	BB+PPT	1	10	3/10/22
	Module 2: Energy storage systems					
11	Thermal energy storage methods	L+D	BB+PPT	1	11	6/10/22
12	Energy saving, Thermal energy storage systems	L+D	BB+PPT	1	12	7/10/22
13	Energy Management: Principles of Energy Management	L+ D	BB+PPT	1	13	8/10/22
14	Energy demand estimation	L+D	BB+PPT	1	14	10/10/22
15	Energy pricing, Energy Audit: Purpose	L+D	BB+PPT	1	15	12/10/22
16	Methodology with respect to process Industries	L+D	BB+PPT	1	16	13/10/22
17	IA-1			1	17	19/10/22
18	Characteristic method employed in Certain Energy Intensive Industries	L+D	BB+PPT	1	18	20/10/22
19	Problems	L+D	BB+PPT	1	19	21/10/22

20	Problems	L+D	BB+PPT	1	20	27/10/22
	Module 3: Environment					
21	Introduction, Multidisciplinary nature of environmental studies-	L+D	BB+PPT	1	21	28/10/22
22	Definition, scope and importance	L+D	BB+PPT	1	22	31/10/22
23	Need for public awareness	L+ D	BB+PPT	1	23	2/11/22
24	Ecosystem: Concept, Energy flow	L+D	BB+PPT	1	24	3/11/22
25	Structure and function of an ecosystem	L+D	BB+PPT	1	25	4/11/22
26	Food chains	L+D	BB+PPT	1	26	7/11/22
27	Food webs and ecological pyramids	L+ D	BB+PPT	1	27	9/11/22
28	Forest ecosystem, Grassland ecosystem	L+D	BB+PPT	1	28	10/11/22
29	Desert ecosystem and Aquatic ecosystems	L+D	BB+PPT	1	29	14/11/22
30	Ecological succession	L+D	BB+PPT	1	30	16/11/22
	Module 4: Environmental Pollution					
31	Environmental Pollution, Definition, Cause. effects	L+D	BB+PPT	1	31	17/11/22
32	Control measures of - Air pollution Water pollution, Soil pollution	L+D	BB+PPT	1	32	18/11/22
33	IA-2			1	33	23/11/22
34	Marine pollution, Noise pollution	L+D	BB+PPT	1	34	24/11/22
35	Thermal pollution and nuclear hazards	L+ D	BB+PPT	1	35	26/11/22
36	Solid waste Management	L+D	BB+PPT	1	36	28/11/22
37	Disaster management Role of an individual in prevention of pollution	L+D	BB+PPT	1	37	29/11/22
38	Pollution case studies	L+D	BB+PPT	1	38	30/11/22
	Module 5: Social Issues and Environment					
39	Social Issues and the Environment	L+D	BB+PPT	1	39	1/12/22
40	Climate change, global warming	L+D	BB+PPT	1	40	2/12/22
41	Acid rain, ozone layer depletion	L+ D	BB+PPT	1	41	5/12/22
42	Accidents and holocaust. Case Studies	L+D	BB+PPT	1	42	7/12/22
43	Wasteland reclamation	L+D	BB+PPT	1	43	8/12/22
44	Consumerism	L+D	BB+PPT	1	44	9/12/22
45	Nuclear and waste products	L+ D	BB+PPT	1	45	12/12/22
46	Environment Protection Act, Air (Prevention and Control of Pollution) Act	L+D	BB+PPT	1	46	13/12/22
47	Water (Prevention and control of Pollution) Act, Wildlife Protection Act	L+D	BB+PPT	1	47	14/12/22

48	Forest Conservation Act Issues involved in enforcement of environmental legislation	L+D	BB+PPT	1	48	15/12/22
49	Group assignments: Assignments related to e-waste management	L+D	BB+PPT	1	49	16/12/22
50	Municipal solid waste management;	L+ D	BB+PPT	1	50	19/12/22
51	Air pollution control systems; Water treatment systems	L+D	BB+PPT	1	51	21/12/22
52	IA-3			1	52	24/12/22
53	Wastewater treatment plants; Solar heating systems	L+D	BB+PPT	1	53	26/12/22
54	Solar power plants; Thermal power plants;	L+ D	BB+PPT	1	54	28/12/22
55	Hydroelectric power plants; Biofuels	L+D	BB+PPT	1	55	29/12/22
56	Environmental status assessments; Energy status assessments etc.	L+D	BB+PPT	1	56	30/12/22

Textbooks:

1. Textbook for Environmental Studies for Undergraduate Courses of all Branches of Higher Education by University grant commission and Bharathi Vidyapeeth Institute of environment education and Research, Pune
2. De, B. K., Energy Management audit & Conservation, 2nd Edition, Vrinda Publication, 2010.

Reference Books:

1. Energy Management Hand book, Turner, W. C., Doty,S. and Truner, W. C, Fairmont Press 7th Edition 2009
2. Energy Management Murphy, W. R Elsevier 2007
3. Energy Management Principles Smith, C. B Pergamum 2007
4. Environment pollution control Engineering, C S Rao New Age International reprint 2015, 2nd edition
5. Environmental studies, Benny Joseph Tata McGraw Hill, 2nd edition, 2008

Details of the teaching aids:

Black Board and Power Point Presentations

Course Incharge **Module coordinator** **HOD ECE** **PRINCIPAL**