



K.S INSTITUTE OF TECHNOLOGY, BENGALURU-560109

TENTATIVE CALENDAR OF EVENTS: ODD SEMESTER (2020-2021)

SESSION: SEP 2020 – DEC 2021

Week No.	Month	Day						Days	Activities
		Mon	Tue	Wed	Thu	Fri	Sat		
1	SEP		1*	2	3	4	5	5	1*-Commencement of Higher Semester
2	SEP	7	8	9	10	11	12	6	
3	SEP	14	15	16	17 DH	18	19	5	17- Mahalaya Amavasya
4	SEP	21	22	23	24	25	26TA	6	
5	SEP/ OCT	28 T1	29 T1	30 T1	1	2 DH	3	5	2- Mahatma Gandhi Jayanthi
6	OCT	5	6BV	7ASD	8	9	10	6	5-10 First Feed Back
7	OCT	12	13	14	15	16	17	6	
8	OCT	19	20	21	22	23	24	6	
9	OCT	26 DH	27	28	29TA	30 DH	31 DH	3	26- Vijayadashami 30- Eid-Milad 31- Maharishi Valmiki Jayanti
10	NOV	2 T2	3 T2	4 T2	5	6	7	6	
11	NOV	9	10 BV	11ASD	12	13	14	6	9-14 Second Feed Back
12	NOV	16 DH	17	18	19	20	21	5	16 - Balipadyami Deepavalli
13	NOV	23	24	25	26	27	28	6	
14	NOV/ DEC	30	1	2	3 DH	4	5TA	5	3- Kanakadasa Jayanti
15	DEC	7 T3	8 T3	9 T3	10 LT	11 LT	12 LT	6	
16	DEC	14	15 BV	16 ASD	17*			4	17* -Last Working Day
17	DEC								

Total No of Working Days : 86

Total Number of working days (Excluding holidays and Tests)=74

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	10
Tuesday	13
Wednesday	13
Thursday	13
Friday	12
Saturday	13
Total	74

29/01/2020
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K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
 DEPARTMENT OF MECHANICAL ENGINEERING
 FIRST TEST - TIME TABLE - ODD SEMESTER (2020-21)

Date	Time	III SEM	V SEM	VII SEM
05/10/2020 MONDAY	09.30 AM to 11.00 AM	Transform Calculus, Fourier Series & Numerical Techniques (18MAT31)	Management and Economics (18ME51)	Energy Engineering (17ME71)
	02.00 PM to 03.30 PM	Mechanics of Materials (18ME32)	Design of Machine Elements - I (18ME52)	Control Engineering (17ME73)
06/10/2020 TUESDAY	09.30 AM to 11.00 AM	Material Science (18ME34)	Fluid Power Engineering (18ME55)	Mechatronics (17ME754)
	02.00 PM to 03.30 PM	Metal cutting and forming (18ME35A)	Dynamics of Machinery (18ME54)	Tribology (17ME742)
07/10/2020 WEDNESDAY	09.30 AM to 11.00 AM	Constitution of India, Professional Ethics and Cyber Law (18CPC39)	Operation Management (18ME56)	Fluid Power Systems (17ME72)
	02.00 PM to 03.30 PM	Basic Thermodynamics (18ME33)	Turbo Machines (18ME54)	

P. K. Lakshminarayana
 CO-ORDINATOR
 3/10/2020

H. S. Jayaram
 HOD
 3/10/2020

PRINCIPAL



K.S. INSTITUTE OF TECHNOLOGY, BENGALURU – 560109

DEPARTMENT OF MECHANICAL ENGINEERING


SECOND TEST - TIME TABLE -ODD SEMESTER – NOV 2020-21

Invigilation Details

Date: 13/11/2020

Date	Time	III SEM	V SEM		VII SEM	
17/11/2020 Tuesday	09.30 am To 11 am	Transform Calculus, Fourier Series & Numerical Techniques (18MAT31)	Management and Economics (18ME51)		Energy Engineering (17ME71)	
		(Mr Venkatramana)	5A (Mr. Gautham S)	5B (Mr. Bharathkumar K R)	7A (Mr. Prasad K)	7B (Mr. Parashuram AK)
	Zoom ID: 2030388887 Password: 900600	Zoom ID: 322 259 0935 Password: 56789	Zoom ID: 8491081446 Password:344641	Zoom ID: 3424060943 Password: energy	Zoom ID: 641 476 4759 Password: 385284	
	2 pm to 3.30 pm	Mechanics of material 18ME32	Design of Machine Elements - I (18ME52)		Control Engineering (17ME73)	
(Mr. Nagabhushana M)		5A (Dr. Girish T R)	5B (Mr. Anilkumar A)	7A (Mr. Kaushik M M)	7B (Mr. Sreesudha N)	
		Zoom ID: 4668847350 Password: 44444	Zoom ID: 3024950623 Password:12345	Zoom ID: 914769 4825 Password: 241177	Zoom ID: 751 2642 5763 Password: 50568	Zoom ID: 910 2512 7137 Password: 23456
18/11/2020 Wednesday	09.30 am To 11 am	Material science 18ME34	Fluid Power Engineering (18ME55)		Mechatronics (17ME754)	
		(Dr. Nirmala L)	5A (Mr. Harish U)	5B (Mr. Gautham S)	7A (Mr. Bharathkumar K R)	7B (Mr. Nagabhushana M)
	Zoom ID: 5344607986 Password: Materials	Zoom ID: 9378791416 Password: 4321	Zoom ID: 322 259 0935 Password: 56789	Zoom ID: 8491081446 Password:344641	Zoom ID: 8110609198 Password:11111	
	2 pm to 3.30 pm	Metal cutting and forming (18ME35A)	Dynamics of Machinery (18ME53)		Tribology (17ME742)	
(Mr. Harish U)		5A (Mr. Ranganath N)	5B (Dr. Nirmala L)	7A (Dr. Girish T R)	7B (Mr. Anilkumar A)	

		Zoom ID: 9378791416 Password: 4321	Zoom ID: 384 478 6707 Password: 24680	Zoom ID: 5344607986 Password: dynamics	Zoom ID: 3024950623 Password:12345	Zoom ID: 914769 4825 Password: 241177
19/11/2020 Thursday	09.30 am To 11 am	Constitution of India, Professional Ethics and Cyber Law (18CPC39)	Operation Management (18ME56)		Fluid Power Systems (17ME72)	
		(Mrs Anuradha)	5A (Mr. Saleem khan)	5B (Mrs. Sreesudh N)	7A (Mr. Ranganath N)	7B (Mr. Manjunath B R)
		Zoom ID: 2631360552 Password: 1970	Zoom ID: 72912689210 Password: 8YKMkb	Zoom ID: 997 1776 1250 Password: 23456	Zoom ID: 384 478 6707 Password: 24680	Zoom ID: 9734998180 Password:153100
	2 pm to 3.30 pm	Basic Thermodynamics (18ME33)	Turbo Machines (18ME54)			
		(Mr. Parashuram AK)	5A (Dr. Nagaprasad K S))	5B (Mr. Prasad K)		
		Zoom ID: 641 476 4759 Password: 385284	Zoom ID: 4080074533 Password:bd8L0w	Zoom ID: 3424060943 Password: energy		


Signature of HOD
 Head of the Department
 Dept. of Mechanical Engg.
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 Bengaluru - 560 109

K.S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF MECHANICAL ENGINEERING
THIRD TEST - TIME TABLE - ODD SEMESTER (2020-21)

Date: 23/12/2020

Date & Day	III SEM 9:30AM TO 11AM	V SEM 11:30AM TO 1 PM		VII SEM 2:00PM TO 3:30 PM
	SUBJECTS			
04/1/2021 MONDAY	Transform Calculus, Fourier Series & Numerical Techniques (18MAT31)	Management and Economics (18ME51)	Management and Engineering Economics (17/15ME51)	Energy Engineering (17ME71)
05/1/2021 TUESDAY	Mechanics of Materials (18ME32)	Design of Machine Elements - I (18ME52)	Design of Machine Elements - I (17/15ME54)	Fluid Power Systems (17ME72)
06/1/2021 WEDNESDAY	Basic Thermodynamics (18ME33)	Dynamics of Machinery (18ME53)	Dynamics of Machinery (17/15ME52)	Tribology (17ME742)
07/1/2021 THURSDAY	Material Science (18ME34)	Turbo Machines (18ME54)	Turbo Machines (17/15ME53)	Mechatronics (17ME754)
08/1/2021 FRIDAY	Metal cutting and forming (18ME35A)	Fluid Power Engineering (18ME55)	Non Traditional Machining (17/15ME554)	
09/1/2021 SATURDAY	Constitution of India, Professional Ethics and Cyber Law (18CPC39)	Operation Management (18ME56)	Energy and Environment (17/15ME562)	
		Environmental Studies (18CIV59) (Timings - 12.30 to 1.30pm)		

Fahim Ali
 CO-ORDINATOR

Shamir
 HOD
 Dept. of Mechanical Engg
 K.S. Institute of Technology
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K. S INSTITUTE OF TECHNOLOGY, BENGALURU-560109

TENTATIVE CALENDAR OF EVENTS: EVEN SEMESTER (2020-2021)


SESSION: APR 2021 - AUG 2021

Week No.	Month	Day						Days	Activities
		Mon	Tue	Wed	Thu	Fri	Sat		
1	APR	19 *	20	21	22	23	24	6	19*-Commencement of Higher Semester 24 Wednesday Time Table
2	APR/MAY	26	27	28	29	30	1H	5	1 May Day
3	MAY	3	4	5	6	7	8	6	8 Monday Time Table
4	MAY	10	11	12	13H	14H	15DH	3	13 Idul Fitr 14 Basava Jayanti
5	MAY	17	18	19	20	21	22TA	6	22 Tuesday Time Table
6	MAY	24 T1	25T1	26T1	27	28	29DH	5	
7	MAY/JUN	31	1	2	3	4	5ASD	6	5 Wednesday Time Table
8	JUN	7	8	9	10	11	12DH	5	
9	JUN	14	15	16	17	18	19	6	19 Monday Time Table
10	JUN	21	22	23	24	25TA	26DH	5	
11	JUN/JUL	28 T2	29T2	30T2	1	2	3	6	3 Thursday time Table
12	JUL	5	6	7	8	9ASD	10DH	5	
13	JUL	12	13	14	15	16	17	6	17 Tuesday Time Table
14	JUL	19	20	21H	22	23	24DH	4	21 Bakrid / Eid al Adha
15	JUL	26	27	28TA	29 T3	30T3	31T3	6	
16	AUG	2LT	3LT	4LT	5LT	6	7*ASD	6	7 Wednesday Time Table 7* Last working day
Total No of Working Days : 86									

Total Number of working days (Excluding holidays and Tests)=73

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

Monday	15
Tuesday	15
Wednesday	15
Thursday	14
Friday	14
Total	73


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DEPARTMENT OF MECHANICAL ENGINEERING
FIRST TEST - TIME TABLE –EVEN SEMESTER – APRIL 2020-21

Invigilation Details

Plat form: Microsoft Team

Date: 15/5/2021

Date	Time	IVSEM	VI SEM		VIII SEM	
			(18 Scheme)	(15 Scheme)		
24/5/2021 Monday	09.30 am To 11 am	Mathematics (18MAT41)	Finite Element Method (18ME61)	Finite Element Analysis (15ME61)	Operation Research (17ME81)	
		(Dr. P Jalaja)/ (Mr Venkatramana)	6A (Mr. Ranganath N) 6B (Mr. Nagabhushana M)	6 A&B (Mr. Nagabhushana M)	8A (Dr. Nagaprasad K S)	8B (Mr. Harish U)
	2 pm to 3.30 pm	Applied Thermodynamics (18ME42)	Design of machine elements -II (18ME62)	Design of machine elements -II (15ME64)		
		(Mr. Parashuram AK)	6A (Dr. Girish T R) 6B (Mr. Anilkumar A)	6A (Dr. Girish T R) 6B (Mr. Anilkumar A)		
25/5/2021 Tuesday	09.30 am To 11 am	Fluid Mechanics (18ME43)	Heat Transfer (18ME63)	Heat Transfer (15ME63)	Additive manufacturing (17ME82)	
		(Mr. Saleem Khan)	6A (Dr. Nagaprasad K S)/ Dr Deelipkumar 6B (Mr. Prasad K)	6A (Dr. Nagaprasad K S)/ Dr Deelipkumar 6B (Mr. Prasad K)	8A (Dr. Girish T R)	8B (Mr. Manjunath B R)
	2 pm to 3.30 pm	Kinematics of Machine (18ME44)	Non Traditional machining {18me641}	Computer Integrated Manufacturing (15ME62)		
		(Dr. L. Nirmala)	6A&B (Dr. Nirmala L)	6 A&B (Mr. Bharathkumar K R)		

26/5/2021 Wednesday	09.30 am To 11 am	Metal Casting and Welding (18ME45B)	Theory of Elasticity {18ME643}	Industrial safety (15ME662)	Product Life cycle Management (17ME835)	
		(Mr Harish U)	6 A&B (Mr. Anilkumar A)	6 A&B (Mr. Bharathkumar K R)	8A (Mr. Prasad K)	8B (Mr. Nagabhushana M)
	2 pm to 3.30 pm	Mechanical Measurement & Metrology (18ME46B)	Introduction to Operating system {18CS654}	Automobile engineering (15ME655)		
		(Mr. Bharathkumar K R)	6A (Mrs. Sogandhika) 6B (Mr. Prashanth)	6 A&B (Mr.Ranganath. N)		

(Handwritten Signature)

Signature of HOD

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



K.S. INSTITUTE OF TECHNOLOGY, BENGALURU – 560109

DEPARTMENT OF MECHANICAL ENGINEERING
SECOND TEST - TIME TABLE – EVEN SEMESTER – JUNE 2020-21

Invigilation Details

Platform: Microsoft Team

Date: 21/06/2021

Date	Time	IVSEM	VI SEM		VIII SEM	
		(18 Scheme)	(18 Scheme)	(15 Scheme)	(17 Scheme)	
28/06/2021 Monday	09.30 am To 11 am	Mathematics (18MAT41)	Finite Element Method (18ME61)	Finite Element Analysis (15ME61)	Operation Research (17ME81)	
		(Dr. P. Jalaja) (Mr. Venkatramana)	6A(Mr. Ranganath N) 6B (Mr. Nagabhushana M)	6 A&B (Mr. Nagabhushana M)	8A (Dr. Nagaprasad K S)	8B (Mr. Harish U)
	2 pm to 3.30 pm	Applied Thermodynamics (18ME42)	Design of machine elements-II (18ME62)	Design of machine elements-II (15ME64)	Additive manufacturing (17ME82)	
		(Mr. Parashuram AK)	6A(Dr. Girish T R) 6B(Mr. Anilkumar A)	6A(Dr. Girish T R) 6B(Mr. Anilkumar A)	8A(Dr. Girish T R)	8B (Mr. Manjunath B R)
29/06/2021 Tuesday	09.30 am To 11 am	Fluid Mechanics (18ME43)	Heat Transfer (18ME63)	Heat Transfer(15ME63)	Product Life cycle Management (17ME83)	
		(Mr. Saleem Khan)	6A (Dr. Nagaprasad K S)/ Dr. Deelipkumar 6B(Mr. Prasad K)	6A (Dr. Nagaprasad K S)/ Dr. Deelipkumar 6B(Mr. Prasad K)	8A (Mr. Prasad K)	8B (Mr. Nagabhushana M)
	2 pm to 3.30 pm	Kinematics of Machine (18ME44)	Theory of Elasticity (18ME64)	Computer Integrated Manufacturing (15ME62)		
		(Dr. L. Nirmala)	6 A&B (Mr. Anilkumar A)	6 A&B (Mr. Bharathkumar K R)		
30/06/2021 Wednesday	09.30 am To 11 am	Metal Casting and Welding (18ME45B)	Non Traditional machining (18ME64I)	Industrial safety (15ME662)		
		(Mr. Harish U)	6A&B (Dr. Nirmala L)	6 A&B (Mr. Bharathkumar K R)		
	2 pm to 3.30 pm	Mechanical Measurement & Metrology(18ME46B)	Introduction to Operating system (18CS654)	Automobile engineering (15ME655)		
		(Mr. Bharathkumar K R)	6A(Mrs. Sougandhika) 6B(Mr. Prashanth)	6 A&B(Mr.Ranganath. N)		

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Head of the Department
 Dept. of Mechanical Engg
 K.S. Institute of Technology

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DEPARTMENT OF MECHANICAL ENGINEERING

THIRD TEST - TIME TABLE –EVEN SEMESTER – AUGUST 2021

Invigilation Details

Plat form: Microsoft Team

Date: 28/07/2021

Date	Time	IVSEM	VI SEM	
		(18 Scheme)	(18 Scheme)	(15 Scheme)
05/08/2021 Thursday	09.30 am To 11 am	Mathematics (18MAT41) (Dr. P Jalaja)/ (Mr Venkatramana)	Finite Element Method (18ME61) 6A(Mr. Ranganath N) 6B (Mr. Nagabhushana M)	Finite Element Analysis (15ME61) 6 A&B (Mr. Nagabhushana M)
		Applied Thermodynamics {18ME42} (Mr. Parashuram AK)	Design of machine elements -II (18ME62) 6A(Dr. Girish T R) 6B(Mr. Anilkumar A)	Design of machine elements -II (15ME64) 6A(Dr. Girish T R) 6B(Mr. Anilkumar A)
	2 pm to 3.30 pm	Fluid Mechanics {18ME43} (Mr. Saleem Khan)	Heat Transfer (18ME63) 6A (Dr. Nagaprasad K S)/ Dr Deelipkumar 6B (Mr. Prasad K)	Heat Transfer(15ME63) 6A (Dr. Nagaprasad K S)/ Dr Deelipkumar 6B(Mr. Prasad K)
		Kinematics of Machine (18ME44) (Dr. L Nirmala)	Theory of Elasticity {18ME643} 6 A&B (Mr. Anilkumar A)	Computer Integrated Manufacturing (15ME62) 6 A&B (Mr. Bharathkumar K R)
06/08/2021 Friday	09.30 am To 11 am	Metal Casting and Welding (18ME45B) (Mr Harish U)	Non Traditional machining {18me641} 6A&B (Dr. Nirmala L)	Industrial safety (15ME662) 6 A&B (Mr. Bharathkumar K R)
		Mechanical Measurement & Metrology(18ME46B) (Mr. Bharathkumar K R)	Introduction to Operating system {18CS654} 6A(Mrs. Sougandhika) 6B(Mr. Prashanth)	Automobile engineering (15ME655) 6 A&B(Mr.Ranganath. N)
	2 pm to 3.30 pm			

P. Venkatesh
Test Co-ordinator

J. Hanu
H.O.D 28/7/2021

Shanmuga
Principal 28/7/21



K.S. INSTITUTE OF TECHNOLOGY, BANGALORE - 560109
I SESSIONAL TEST QUESTION PAPER 2020 - 21ODDSEMESTER

USN

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Degree : B.E
Branch : Mechanical Engineering
Subject Title : Management & Economics
Duration : 90 Minutes

Semester : V A & B
Subject Code : 18ME51
Date : 05.10.2020
Max Marks : 30

Note: Answer ONE full question from each part.

Q No.	Question	Marks	CO mapping	K Level
PART-A				
1(a)	Define management. Explain the nature and characteristics of management.	6	CO1	K2 (Understanding)
(b)	Explain the various functional areas of management.	12	CO1	K2 (Understanding)
OR				
2(a)	Explain the important steps of decision making in planning with a block diagram.	8	CO1	K2 (Understanding)
(b)	Explain modern management approaches.	4	CO1	K2 (Understanding)
(c)	Explain briefly the contributions of F.W. Taylor for the scientific management.	6	CO1	K2 (Understanding)
PART-B				
3(a)	Explain in brief various types of Organization.	6	CO2	K2 (Understanding)
(b)	Explain briefly the selection process of personnel for the organization.	6	CO2	K2 (Understanding)
OR				
4(a)	Explain the principles of Organization.	6	CO2	K2 (Understanding)
(b)	Briefly explain the process of M.B.O and M.B.E	6	CO2	K2 (Understanding)

1)

2)
Course in charge

HOD 1/10/2020



K.S INSTITUTE OF TECHNOLOGY BANGALURU – 560109

Scheme & Solution of FIRST Internal Test, September 2020

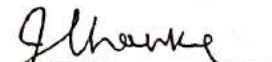
Course Code/Title: 17ME51/Management & Economics Semester: V

Question Number	Solution	Marks Allotted
PART – A		
1 (a)	Management definition Any 5 of the following Nature and characteristics of Management along with explanations; i. Involves decision-making ii. It Co-ordinates all activities & resource iii. It is a universal activity iv. It is an integrating process v. It is concerned with direction & control vi. It is intangible vii. It is a profession	1 M 5 M
1 (b)	Functional areas of management. Diagram <div style="text-align: center;"> <pre> graph TD Planning --> Organising Organising --> Staffing Staffing --> Directing Directing --> Controlling Controlling --> Planning </pre> </div> Explanation i. Planning ii. Organizing iii. Staffing iv. Leading v. Controlling	2 M 2 M 2 M 2 M 2 M 2 M

	Time and Motion Study	1 M
	Differential Payment	1 M
	Reorganisation of Supervision	1 M
	Scientific Recruitment and Training	1 M
3 (a)	Types of Organization i. Line organization ii. Functional or Staff organization iii. Line and Staff organization iv. Committee organization v. Matrix organization	6 M
3 (b)	Selection process of personnel for the organization. Application bank Initial interview Employment tests Physical or medical examination Final interview	6 M
4 (a)	Principles of Organization i. Objectives ii. Specialization iii. Span of control iv. Exception v. Scalar Principle vi. Unity of command vii. Delegation viii. Responsibility ix. Authority	6 M
4 (b)	Explanation on MBO and MBE	6 M

1) 

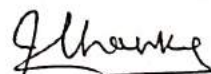
2) 
Course In-charge


HOD/ME 1/10/2020

	Time and Motion Study	1 M
	Differential Payment	1 M
	Reorganisation of Supervision	1 M
	Scientific Recruitment and Training	1 M
3 (a)	Types of Organization i. Line organization ii. Functional or Staff organization iii. Line and Staff organization iv. Committee organization v. Matrix organization	6 M
3 (b)	Selection process of personnel for the organization. Application bank Initial interview Employment tests Physical or medical examination Final interview	6 M
4 (a)	Principles of Organization i. Objectives ii. Specialization iii. Span of control iv. Exception v. Scalar Principle vi. Unity of command vii. Delegation viii. Responsibility ix. Authority	6 M
4 (b)	Explanation on MBO and MBE	6 M

1) 

2) 
Course In-charge


HOD/ME 1/10/2020



K.S. INSTITUTE OF TECHNOLOGY, BANGALORE - 560109
II SESSIONAL TEST QUESTION PAPER 2020 - 21ODDSEMESTER

USN

Degree : B.E
Branch : Mechanical Engineering
Subject Title : Management & Economics
Duration : 90 Minutes

Semester : V A & B
Subject Code : 18ME51
Date : 17.11.2020
Max Marks : 30

Note: Answer ONE full question from each part.


Q No	Question	Marks	CO mapping	K Level
PART-A				
1 (a)	Explain with a neat block diagram the problem solving process and decision making process.	6	CO3	K2 (Understanding)
(b)	List the differences between Microeconomics and Macroeconomics.	6	CO3	K2 (Understanding)
(c)	A person who is now 35 years old is planning for his retired life. He plans to invest an equal sum of ₹10,000 at the end of every year for the next 25 years. The bank gives 20% interest rate, compounded annually. Find the maturity value of his account when he is 60 years old.	6	CO3	K3 (Applying)
OR				
2 (a)	Explain the laws of demand and supply. And illustrate the concept of elasticity of demand with an example.	6	CO3	K2 (Understanding)
(b)	Define the Law of Return and explain the causes for three phases of Law of Return.	6	CO3	K2 (Understanding)
(c)	A person is planning for his retired life. He has 10 more years of service. He would like to deposit 20% of his salary, which is ₹4,000, at the end of the first year, and thereafter he wishes to deposit the amount with an annual increase of ₹500 for the next 9 years with an interest rate of 15%. Find the total amount at the end of the 10th year of the above series.	6	CO3	K3 (Applying)

PART-B

3 (a)	Explain briefly the Maslow's need of hierarchy theory and Adams equity theory.	6	CO2	K2 (Understanding)															
(b)	<p>A construction company receives two bids for an elevator to be installed in their newly constructed apartment. The details of which is given in the following table;</p> <table border="1" data-bbox="207 414 989 683"> <thead> <tr> <th rowspan="2">Bidding Company</th> <th colspan="3">Construction company estimates</th> </tr> <tr> <th>Initial Cost (₹)</th> <th>Service life (years)</th> <th>Annual operations and maintenance cost (₹)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>5,80,000</td> <td>15</td> <td>29,500/-</td> </tr> <tr> <td>2</td> <td>6,40,000</td> <td>15</td> <td>30,800/-</td> </tr> </tbody> </table> <p>Determine the best bid based on the present worth method of comparison assuming 12% rate of interest, compounded annually.</p>	Bidding Company	Construction company estimates			Initial Cost (₹)	Service life (years)	Annual operations and maintenance cost (₹)	1	5,80,000	15	29,500/-	2	6,40,000	15	30,800/-	6	CO4	K3 (Applying)
Bidding Company	Construction company estimates																		
	Initial Cost (₹)	Service life (years)	Annual operations and maintenance cost (₹)																
1	5,80,000	15	29,500/-																
2	6,40,000	15	30,800/-																
OR																			
4 (a)	Explain the different techniques of co-ordination.	6	CO2	K2 (Understanding)															
(b)	<p>A company is planning to purchase a Hydraulic pressing machine. If it is purchased under down payment, the cost of the machine is ₹16,00,000. If it is purchased under installment basis, the company has to pay 25% of the cost at the time of purchase and the remaining amount in 10 annual equal installments of ₹2,00,000 each. Determine the best alternative for the company using the present worth basis at $i = 18%$, compounded annually.</p>	6	CO4	K3 (Applying)															



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 HOD/ME 5/11/2020

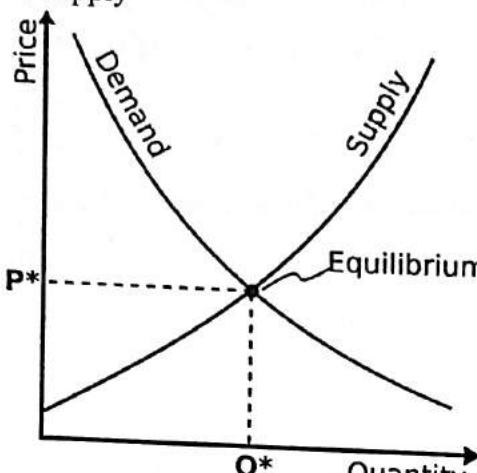
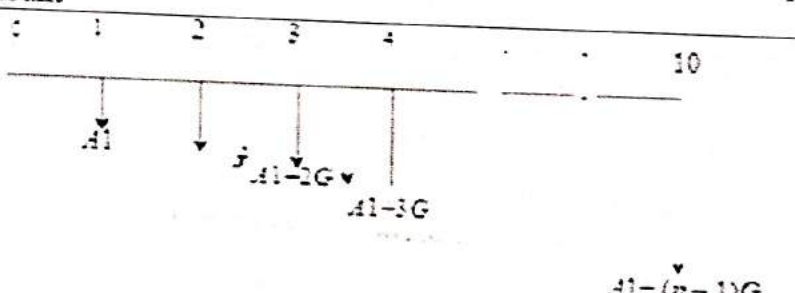


K.S INSTITUTE OF TECHNOLOGY BANGALURU – 560109

Scheme & Solution of Second Internal Test, November 2020

Course Code/Title: 17ME51/Management & Economics Semester: V

Question Number	Solution	Marks Allotted
PART – A		
1 (a)	<p>Problem solving process and decision making process Diagram</p> <p style="text-align: center;"><i>Problem-solving iteration</i></p>	2 M
	Explanation	4 M
1 (b)	Any six differences between Microeconomics and Macroeconomics.	6 M
1 (c)	<p>Cash Flow Diagram of equal payment series compound amount.</p> $F = A \frac{(1 + i)^n - 1}{i}$ <p style="text-align: center;">$F = ₹47,19,810/-$</p>	2 M
		4 M

2 (a)	<p>Law of demand and supply</p> 	3 M
2 (b)	<p>Explaining the concept of elasticity of demand with an example</p>	3 M
	<p>Explaining the Law of Return</p>	3 M
	<p>Explanation on the causes for three phases of Law of Return.</p>	3 M
2 (c)	<p>Cash Flow Diagram of Uniform Gradient Series Annual Equivalent Amount</p>  $A = A1 \pm G \left[\frac{(1+i)^n - in - 1}{i(1+i)^n - 1} \right]$ $A = ₹5,691.60/-$ $F = A \left[\frac{(1+i)^n - 1}{i} \right]$ $F = ₹1,15,562.25/-$	2 M
3 (a)	<p>Explanation on Maslow's need of hierarchy theory and Explanation on Adams equity theory.</p>	3 M
3 (b)	<p>Cash flow diagram on cost-dominated decision problem</p>	3 M
	$P_{w1} = P + C \left[\frac{(1+i)^n - 1}{i(1+i)^n} \right] - S \left[\frac{1}{(1+i)^n} \right]$ $P_{w1} = 5,80,000 + 29,500 \left[\frac{(1+0.12)^{15} - 1}{0.12(1+0.12)^{15}} \right] - 0$ $P_{w1} = ₹7,80,920.37/-$	2 M

	$P_{w2} = P + C \left[\frac{(1+i)^n - 1}{i(1+i)^n} \right] - S \left[\frac{1}{(1+i)^n} \right]$ $P_{w2} = 6,40,000 + 30,800 \left[\frac{(1+0.12)^{15} - 1}{0.12(1+0.12)^{15}} \right] - 0$ $P_{w2} = ₹8,49,774.49/-$	2 M
4 (a)	<p>Different techniques of co-ordination</p> <ul style="list-style-type: none"> • Clearly Defined Objectives • Effective Chain of Command • Precise and Comprehensive Programmes and Policies • Cooperation • Liaison of Officers/Departments • Induction • Incentives • Workflow 	6 M
4 (b)	<p>Cash Flow diagram</p> <p style="text-align: center;">$i = 18\%$</p> $P_{w2} = P + C \left[\frac{(1+i)^n - 1}{i(1+i)^n} \right] - S \left[\frac{1}{(1+i)^n} \right]$ $P_{w2} = 4,00,000 + 2,00,000 \left[\frac{(1+0.18)^{10} - 1}{0.18(1+0.18)^{10}} \right] - 0$ $P_{w2} = ₹12,98,820/-$	2 M 4 M

Course In-charge

Alhamed
HOD/ME 5/11/2020



K.S. INSTITUTE OF TECHNOLOGY, BANGALORE - 560109
III SESSIONAL TEST QUESTION PAPER 2020 - 21ODDSEMESTER

USN

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Degree : B.E
 Branch : Mechanical Engineering
 Subject Title : Management & Economics
 Duration : 90 Minutes

Semester : V A & B
 Subject Code : 18ME51
 Date : 04.01.2021
 Max Marks : 30

Note: Answer ONE full question from each part.

Q No	Question	Marks	CO	K-Level
PART-A				
1	Explain briefly the elements of product cost with a block diagram.	6	CO5	K2 (Understanding)
(a)	A student has bought a moped whose first cost is ₹10,000 with an estimated life of 8 years. The estimated salvage value of the moped at the end of its lifetime is ₹2000. Determine the depreciation amount and the book value at the end of various years using Straight Line Method of depreciation. Also find the book value at the end of 7th year as a specific period.	6	CO5	K3 (Applying)
(b)	The following diagram shows the 'lathe dead center', along with its dimensions, to be manufactured for a particular lathe. Estimate its weight and cost of material if Cast Iron is used to make it. Take density of CI as 7787 kg/m ³ and material cost as Rs.58 per kg.	6	CO5	K3 (Applying)
OR				
2	Illustrate & Explain with a neat diagram how "Selling Price" is determined.	6	CO5	K2 (Understanding)
(a)	A person had purchased a device whose first cost is ₹10,000 with an estimated life of 8 years. The estimated salvage value of the moped at the end of its lifetime is ₹2000. Determine the depreciation amount and the book value at the end of various years using Sinking Fund Method with an interest rate of 10%. Also find the book value at the end of 7th year as a specific period.	6	CO5	K3 (Applying)
(b)	A hit-tech bus was initially bought for ₹50 lakhs. Its salvage value after 8 years of service would be ₹10 lakhs. In its lifetime it can be driven for a distance of 10 lakh kms. In its 5 th year of operation, if it has already traversed a total distance of 8 lakh kms. Find the depreciation of the bus at the point.	6	CO5	K3 (Applying)

PART-B

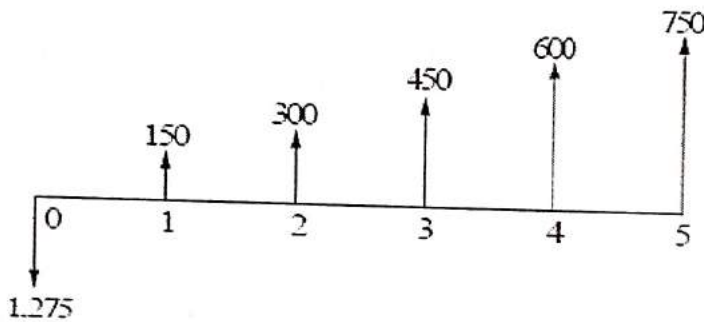
3 (a) A man owns a land. He must decide which of the several alternatives to select in trying to obtain a desirable return on his investment. After much study and calculation, he decides that the two best alternatives are as given in the following table:

	Alternative 1	Alternative 2
First Cost (₹)	20,00,000	36,00,000
Annual Property Tax (₹)	80,000	1,50,000
Annual income (₹)	8,00,000	9,80,000
Life of building (years)	20	20
Salvage value (₹)	0	0

Evaluate the alternatives based on the future worth method at $i=12\%$.

6 CO4 K3 (Applying)

(b) For the cash flow diagram shown in the following figure, compute the rate of return. The amounts are in rupees.



6 CO4 K3 (Applying)

OR

4 (a) A person is planning a new business. The initial outlay and cash flow pattern for the new business are as listed below. The expected life of the business is five years. Find the rate of return for the new business.

Period	0	1	2	3	4	5
Cash Flow (₹)	-1,00,000	30,000	30,000	30,000	30,000	30,000

6 CO4 K3 (Applying)

(b) A company is planning to purchase an advanced machine centre. Three original manufacturers have responded to its tender whose particulars are tabulated as follows:

Manufacturer	Down payment (₹)	Yearly equal installment (₹)	No. of installments (₹)
1	5,00,000	2,00,000	15
2	4,00,000	3,00,000	15
3	6,00,000	1,50,000	15

Determine the best alternative based on the annual equivalent method by assuming $i = 20\%$, compounded annually.

6 CO4 K3 (Applying)

Course In-charge

HOD/ME 29/12/2020



K.S INSTITUTE OF TECHNOLOGY BANGALURU – 560109

Scheme & Solution of Third Internal Test, January 2021

Course Code/Title: 17ME51/Management & Economics Semester: V

Q No.	Solution	Marks Allotted
PART – A		
1 (a)	<p>Explanation on elements of product cost</p> <div style="text-align: center;"> <pre> graph TD EC[Elements of Cost] --> M([Material]) EC --> L([Labour]) EC --> E([Expenses]) M --> MD[Direct] M --> MI[Indirect] L --> LD[Direct] L --> LI[Indirect] E --> ED[Direct] E --> EI[Indirect] MI --> PO[Production overheads] LI --> AO[Admin overheads] EI --> SO[Sales overheads] EI --> DO[Distribution overheads] </pre> </div>	5 M 1 M
1 (b)	<p>Solution</p> <p>i. Depreciation amount</p> $D_t = \frac{P - S}{n} = ₹1000$ <p>ii. Book value</p> $B_t = B_{t-1} - D_1$ <p>Table showing values of D_t and B_t for all years</p> <p>iii. Finding Book value for Specific period of 7th year</p> $B_t = P - t \left[\frac{P - S}{n} \right] = ₹3000$	2 M 2 M 2 M
1 (c)	<p>Solution</p> <p>i. Volume of sub-shape A (Conical)</p> $V_A = \frac{1}{3} \pi r^2 h = 28,340 \text{ mm}^3$ <p>ii. Volume of sub-shape B and D - (Cylindrical and identical)</p> $V_B = V_D = \pi r^2 * 6 = 11,780.97 \text{ mm}^3$ <p>iii. Volume of sub-shape C - (Cylindrical)</p> $V_C = \pi r^2 l = 26,880.25 \text{ mm}^3$	1 M 1 M 1 M

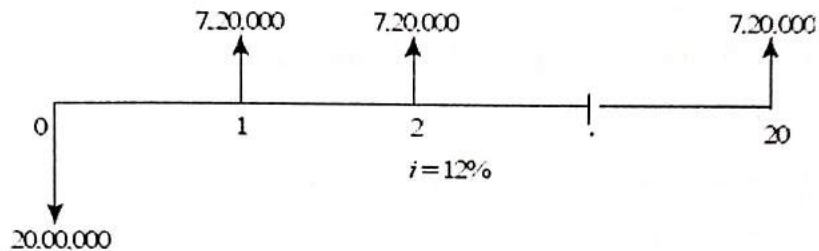
	iv. Volume of sub-shape E - (Frustum of cone) $V_E = \frac{\pi(r^2 + rR + R^2)h}{3} = 98,390.75 \text{ mm}^3$	1 M
	v. Total volume of the lathe center $V = V_A + V_B + V_C + V_D + V_E = 1.77172 \times 10^{-4} \text{ m}^3$	1 M
	vi. Cost of material = ₹80.02	1 M
2 (a)	Explanation on determination of selling price <div style="text-align: center;"> </div> <p style="text-align: center;">Block diagram to illustrate the relation between 'Elements of Cost' & 'Components of Cost'.</p>	5 M 1 M
2 (b)	Solution i. Finding depreciation amount $D_t = (P - S)(A/F, i, n) = ₹ 699.20$ Table Showing value of D, and B, for all years ii. To find D_t , and B_t , for specific periods $D_t = (P - S) \left(\frac{i}{(1 + i)^n - 1} \right) (1 + i)^{t-1} = 1239.29$ $B_t = P - \left[(P - S) \left(\frac{i}{(1 + i)^n - 1} \right) \left(\frac{(1 + i)^t - 1}{1} \right) \right] = 3363.22$	2 M 2 M 2 M
2 (c)	Solution To find unit depreciation $D_u = \frac{P - S}{C} = ₹4 \text{ per km.}$ Depreciation after q kms, $D_u = \left(\frac{P - S}{C} \right) * q = ₹32 \text{ lakhs}$	3 M 3 M
	Solution;	

3 (a)

Alternative 1

Net annual income = Annual income – Annual property tax
= ₹8,00,000 – ₹80,000
= ₹ 7,20,000/-

1 M



1 M

The future worth of alternative 1 is computed as

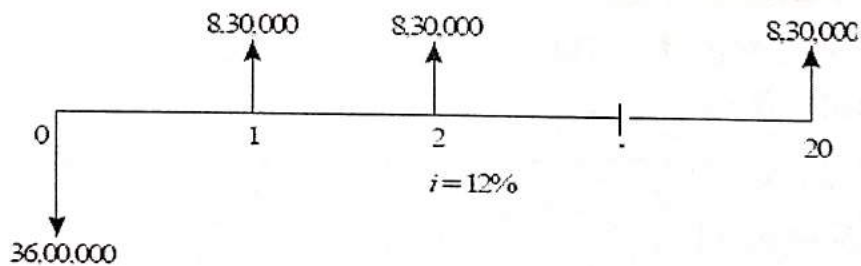
$$FW_1(12\%) = -20,00,000 (F/P, 12\%, 20) + 7,20,000 (F/A, 12\%, 20)$$
$$= ₹ 3,25,85,440/-$$

1 M

Alternative 2

Net annual income = Annual income – Annual property tax
= ₹ 9,80,000 – ₹ 1,50,000
= ₹ 8,30,000/-

1 M



1 M

The future worth of alternative 2 is calculated as

$$FW_2(12\%) = -36,00,000 (F/P, 12\%, 20) + 8,30,000 (F/A, 12\%, 20)$$
$$= ₹ 2,50,77,560/-$$

1 M

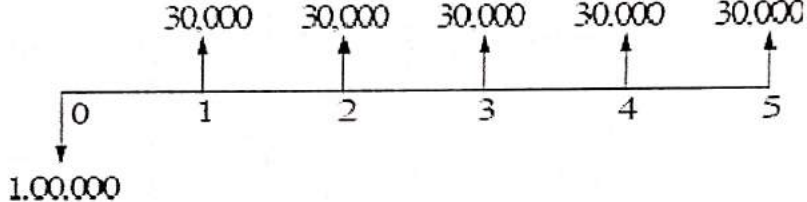
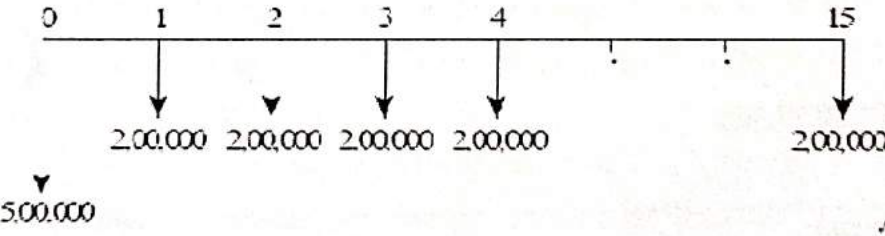
3 (b)

Solution;

$$A = A_1 + G(A/G, i, n)$$
$$= 150 + 150(A/G, i, 5)$$

The formula for the present worth of the whole diagram

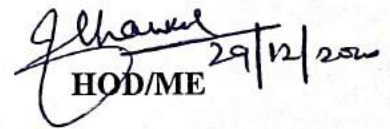
1 M

	$= -1,275 + [150 + 150(A/G, i, 5)] \times (P/A, i, 5)$ <p>PW(10%) = ₹ 322.88 PW(12%) = ₹ 225.28 PW(15%) = ₹ 94.11 PW(18%) = ₹ -21.24</p> <p>Therefore, the rate of return for the cash flow diagram is $i = 17.45\%$</p>	1 M 1 M 1 M 1 M 1 M
4 (a)	<p>Solution Cash flow diagram,</p>  <p>The present worth function for the business is $PW(i) = -1,00,000 + 30,000(P/A, i, 5)$</p> <p>PW(10%) = ₹ 13,724. PW(15%) = ₹ 566. PW(18%) = ₹ -6,184</p> <p>$i = 15.252\%$</p>	1 M 1 M 1 M 1 M 1 M
4 (b)	<p>Solution; Alternative 1</p>  <p>$AE1(20\%) = 5,00,000(A/P, 20\%, 15) + 2,00,000$ = ₹ 3,06,950</p> <p>Alternative 2</p>	1 M 1 M

	<p>0 1 2 3 4 . . . 15</p> <p>↓ ↓ ↓ ↓ ↓ ↓ ↓</p> <p>4,00,000 3,00,000 3,00,000 3,00,000 3,00,000 . . . 3,00,000</p> <p>AE2(20%) = $4,00,000(A/P, 20\%, 15) + 3,00,000$ = ₹ 3,85,560.</p>	1 M 1 M
	<p>Alternative 3</p> <p>0 1 2 3 4 . . . 15</p> <p>↓ ↓ ↓ ↓ ↓ ↓ ↓</p> <p>6,00,000 1,50,000 1,50,000 1,50,000 1,50,000 . . . 1,50,000</p> <p>AE3(20%) = $6,00,000(A/P, 20\%, 15) + 1,50,000$ = ₹ 2,78,340.</p>	1 M 1 M



Course In-charge


29/12/2020
HOD/ME

Online Internal Assessment Conduction, Platform:Microsoft Teams

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Branch : Mechanical Engineering Course Code : 17ME71
 Course Title : ENERGY ENGINEERING Date : 17-11-2020
 Duration : 90 Minutes Max Marks : 30

Note: Answer ONE full question from each part.

Q No.	Question	Marks	CO mapping	K- Level
PART-A				
1(a)	Identify different types of flat plate collector, With neat Sketch explain the liquid Flat plate collector	6	CO4	Applying (K3)
(b)	Calculate the local apparent time (LAT) corresponding to 13.30 hrs(IST) on July 16 at Delhi(28°35'N,77°12'E). The equation of time correction on July16 is (-6) minutes. Indian standard time (IST) is the local civil time corresponding to 82.5°E longitude. Also calculate declination	6	CO4	Applying (K3)
(c)	Wind at 1 standard atmospheric pressure and 20°C has velocity of 12 m/s. The turbine has diameter of 120 m and operating speed in 40 rpm at maximum efficiency. Calculate i) Total power density ii) Maximum power density iii) Obtainable power density assuming $\eta = 35\%$ iv) Total power v) Total torque	6	CO4	Applying (K3)

Page: 1 of 2 | Words: 472

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$\eta = 35\%$ iv) Total power v) Total torque

OR

2(a)	Identify the advantages of Solar pond, and with neat Sketch explain the principle of working of solar pond	6	CO4	Applying (K3)
(b)	Calculate sun altitude angle (α) and solar azimuth angle (γ_s) on August 1 st for location at 40°N latitude at 7.30 am solar time.	6	CO4	Applying (K3)
(c)	Prove that in case of horizontal axis wind turbine maximum power $P_{max} = 8/27 (\rho A V^3)$	6	CO4	Applying (K3)
PART-B				
3(a)	Briefly explain the working principle of solar cell and discuss the parameter affecting the performance	6	CO2	Understanding (K2)
(b)	The runoff data for a river at a particular site is tabulated as below Draw hydrograph and Calculate power in MW available at mean flow if the head available is 80 m and overall efficiency of generator is 85% .take a each month 30 days (Refer Table No1)	6	CO3	Applying (K3)
OR				
4(a)	Discuss the advantages and disadvantages of solar Energy and with a neat Sketch explain the working of Pyranometer	6	CO2	Understanding (K2)

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