K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of JUNE/JULY – 2024							Dept.: H & S Academic Year 2023 – 2024
Course Code	:	2321201	Course:	Differential Equations and Vector Calculus			
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Minutes
Semester	:	II	Section:	Common to All Branches			Date: 26th June 2024

Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

PART-A **05*02 = 10 Marks**

Q. No	Question (s)	Marks	CO	BL
1 (a)	Construct the partial differential equation by eliminating the arbitrary constants a and b from $z = ax + by + ab$.	2 M	CO3	L2
(b)	Find the general solution of $p + q = 1$.	2 M	CO3	L1
(c)	If $\bar{f} = (x + 3y)\bar{\imath} + (y - 2z)\bar{\jmath} + (x + pz)\bar{k}$ is solenoidal then find p.	2 M	CO4	L1
(d)	If $\bar{f} = yz\bar{\imath} + zx\bar{\jmath} + yx\bar{k}$, then find Curl$\bar{f}$.	2 M	CO4	L1
(e)	State the Gauss-Divergence theorem.	2 M	CO5	L1

PART-B **04*10 = 40 Marks**

Q. No	Question (s)	Marks	CO	BL
2.	(a) Construct the partial differential equation by eliminating the arbitrary constants from $(x - a)^2 + (y - b)^2 + z^2 = c^2$. (b) Construct the partial differential equation by eliminating the arbitrary functions from $z = f(x + at) + g(x - at)$.	5M 5M	CO3 CO3	L3 L3
	(OR)			
3.	Solve $x^2(y - z)p + y^2(z - x)q = z^2(x - y)$.	10M	CO3	L3
4.	(a) Find a unit vector normal to the surface $xy^3z^2 = 4$ at the point (-1, -1,2). (b) Prove that the vector $(-x^2 + yz)\bar{\imath} + +(4y - z^2x)\bar{\jmath} + (2xz - 4z)\bar{k}$ is solenoidal.	5M 5M	CO4 CO4	L1 L5
	(OR)			
5.	Prove that $\nabla^2(r^n) = n(n + 1)r^{n-2}$.	10M	CO4	L5

6.	(a) Determine the directional derivative of $f(x,y,z) = xy^3 + yz^3$ at the point (2, -1,1) in the direction of vector $\bar{\imath} + 2\bar{\jmath} + 2\bar{k}$. (b) Prove that the vector $(-x^2 + yz)\bar{\imath} + +(4y - z^2x)\bar{\jmath} + (2xz - 4z)\bar{k}$ is solenoidal.	5M 5M	CO4 CO4	L5 L5
	(OR)			
7.	Prove that the vector $(x^2 - yz)\bar{\imath} + (y^2 - zx)\bar{\jmath} + (z^2 - xy)\bar{k}$ is irrotational and find its scalar potential.	10M	CO4	L5

8.	Determine the work done in moving a particle in the force field $F = 3x^2\bar{\imath} + (2xz - y)\bar{\jmath} + z\bar{k}$ along (a) the straight line from (0,0,0) to (2,1,3). (b) the curve defined by $x^2 = 4y$, $3x^3 = 8z$ from x=0 to x=2.	10M	CO5	L5
	(OR)			
9.	Verify Green's theorem for $\int_c [(xy + y^2)dx + x^2dy]$, where C is bounded by $y = x$ and $y = x^2$.	10M	CO5	L5

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of June – 2024							Dept.:	CE, ME,ECE &EEE-RA
							Academic Year	2024 – 2025
Subject Code	:	23CM205	Subject:	BASICS OF CIVIL AND MECHANICAL ENGINEERING				
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	A,B & C			Date: 27-06-2024	

Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

PART-A **05*02 = 10 Marks**

Q. No	Question (s)	Marks	CO	BL
1 (a)	Define leveling. List out the angular measurements.	2 M	CO2	L1
(b)	Differentiate flexible pavements and rigid pavements?	2 M	CO3	L2
(c)	Define camber and precipitation?	2 M	CO3	L1
(d)	Define a Boiler?	2 M	CO2	L1
(e)	Classify different types of power plants ?	2 M	CO3	L2

PART-B **04*10 = 40 Marks**

Q. No	Question (s)	Marks	CO	BL
2.	Define bearings? The staff readings taken at stations A and B are 2.750 and 0.725 m respectively. Find the RL of B if the RL of A is 50.000 and the difference in level between A and B.	10M	CO2	L1
	(OR)			
3.	Define camber and super elevation .Explain about basic geometric design elements of a high way.	10M	CO3	L1
4.	Explain the significance of transportation in Nation's economic development?	10M	CO3	L2
	(OR)			
5.	Define hydrology? Briefly explain about hydrological cycle with neat sketch?	10M	CO3	L1
6.	With the help of a neat sketch explain about 4-stroke Diesel engine?	10M	CO1	L2
	(OR)			
7.	Highlight the importance of 3D printing and smart manufacturing?	10M	CO1	L4
8.	Identify the importance of Nuclear power plant?	10M	CO1	L3
	(OR)			
9.	Interpret the configuration and applications of Robotics?	10M	CO1	L5

K.S.R.M COLLEGE OF ENGINEERING, KADAPA (AUTONOMOUS) B. Tech II Mid Term Examinations June, 2024					Dept.: Humanities and Sciences Academic Year 2023 – 2024
Subject Code	:	2324201	Subject: Communicative English		
Mid Term	:	II	Marks : 50	Regulations : R23 UG	Duration : 90 Min
Year	:	I	Semester : II	Branch & Section : (Common to CSE, EEE &AIML)	Date :27 June, 2024, FN.

Note: 1. Question paper consists of two parts (Part A and part B)

2. Answering Q. No : 1 in Part A is compulsory

3. All questions from Part B are to be answered with internal choice.

PART - A **5X2 = 10 Marks**

Q. No	Questions	Marks	CO	BL
1. a	How do you define Self esteem ?	2M	CO5	L1
b	Explain Intra personal communication?	2M	CO5	L2
c	What is penname of Hector Hugh Munro?	2M	CO4	L1
d	Define verb?	2M	CO3	L1
e	Write brief note resume?	2M	CO4	L1

PART – B **4x10 = 40 Marks**

Q. No	Questions	Marks	CO	BL
2.	Describe musk's Early years and how it inspired his interest in business and Technology?	10 M	CO3	L2
	OR			
3.	**A)** Explain the steps of effective note-making?	05 M	CO3	L2
	B) Fill in the blanks with suitable verb forms a) we_____ (go) abroad last year. b) rohith _____ (work) in a company for the last two years. c) I _____ (play) tennis everyday. d) we_____ (finish) our work just now . e) Look! It _____ (rain).	05 M	CO3	L3
4.	Do you think Harvey and Elizabeth's experiment failed? Justify your answer.	10 M	CO4	L5
	OR			
5.	**A) Write a letter to your principal of your college for permission to go on a class for picnic?** **B) Convert the following as directed** a) He said "The earth is round "**(Into Indirect)** b) She said " I will decorate the children's room **(Into indirect)** c) varsha said to me " When is rahul going home? **(Into indirect)** d) Ramu says that priya is working in Ahmadabad **(Into direct)** e) The teacher said "How old I was "?**(Into direct)**	05 M 05M	CO4 CO4	L4 L4
6.	Reflect on the ways in which you can incorporate intra personal communication in your own life? Describe these ?	10 M	CO5	L5
	OR			
7.	**A)** Write an essay on violence in cinema promotes violence in society?	05 M	CO5	L5
	B) Give the meanings and usage for the following technical vocabulary a) Compensate b) accuracy c)domain	3 M	CO5	L5

	C) Make compound words with the words given below a) room b) board	2 M	CO3	L3

8.	**A) Correct the following sentences here necessary** a) where you are staying? b) This is a longest river in the world c) This song is one of my favorite. d) She is thinking of me . e) The teacher says that the sun will rise in the east.	05 M	CO5	L5
	B) Write the meaning for the following confused words. a) affect vs effect b) beside vs besides c) complement vs compliment d)here vs hear e) insight vs incite	05 M	CO4	L4
	OR			
9.	**A) Fill in the blanks with the suitable verbs on subject-verb agreement** a) Your baggage _____ (is/are) heavy. b) Rs 10,000 a month _____ (is/are) a good salary for a beginner . c) Everyone _____ (want/wants) to succeed. d) No one _____ (know/knows) the answer. e) 150 kilometers _____(are/is) not a great distance	05 M	CO3	L2
	B) Read the passage carefully and answer the questions given below it. 5 M A generator is essential just an electric motor working in reverse. An electric motor consists of a tight coil of copper wire wrapped around an iron core that's free to rotate at high speed inside a powerful, electrically powered magnet - in other words, an electromagnet -and coil , it becomes a temporary, electrically powdered magnetic_inother words, an Electromagnetans generates a magnetic field all around it. This temporary magnetic field pushes against the magnetic field that the permanent magnet creates and forces the coil to rotate. By a bite of clever design. The coil can be made to rotate continuously in the same direction, spinning round and round powering anything from an electric toothbrush to an electric train. So how is a generator different? Suppose you have an eletric toothbrush with a rechargeable battery inside. Instead of letting the battery power the motor that pushes the brush, what if you did the opposite? What if you turned the brush back and forth reapeatedly? What you 'd be doing would be manually turning the electric motor's axle. That would make the copper coil inside the motor turn around repeatedly inside it's permanent magnet. If you move on electric wire inside a magnetic field, you make electricity flow through the wire -in effect , you generate electricity. Keep turning the toothbrush long enough and, in theory, you would generate enough electricity to recharge its battery. That in effect, is how a generator works. a. What is this passage about? b. Where are electric motors used ? c. How can you create a simple electromagnet ? d. What is the purpose of a generator ? e. Mention two differences between a generator and an electric motor..	05 M	CO5	L5

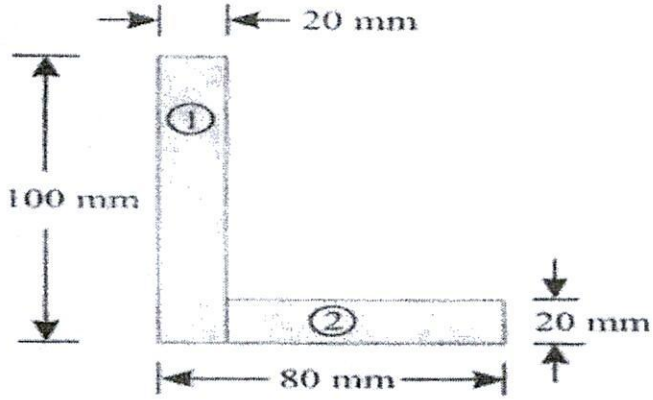
K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of June – 2024							Dept.: CE; Academic Year 2023 – 2024
Subject Code	:	23EM204	Subject:	Engineering Mechanics			
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	A			Date: 28-06-2024 FN

Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

PART-A **05*02 = 10 Marks**

Q. No	Question (s)	Marks	CO	BL
1 (a)	What is center of gravity?	2 M	CO3	L1
(b)	Write the relation between distance, velocity and acceleration of liner motion of particles.	2 M	CO4	L1
(c)	What is D-Alembert's principle?	2 M	CO4	L1
(d)	What is relation between RPM and angular velocity of a rigid body?	2 M	CO5	L1
(e)	What is impulse moment equation?	2 M	CO5	L1

PART-B **04*10 = 40 Marks**

Q. No	Question (s)	Marks	CO	BL
2.	Find the Moment of Inertial of the given section with respect to centroid x-axis. 	10M	CO3	L3
	(OR)			
3.	Derive the expression for moment of inertia of rectangular section about the centroidal axis.	10M	CO3	L2
4.	A Car is moving with a velocity of 20 m/sec. The car brought to rest by applying breaks in 10 sec determine (i) retardation, (ii) distance travelled by the car after brakes applied.	10M	CO4	L3
	(OR)			
5.	A particle moves along a stright line so that its displacement in meters from a fixed point is given by $s=t^3+3t^2+4t+5$. Find (i) velocity at start and after 4 sec, (ii) acceleration at start and after 4 sec.	10M	CO4	L3

6.	Define (i) Velocity of projection, (ii) Angle of projection, (iii) Time of flight, (iv) Horizontal Range with neat sketch.	**10M**	**CO4**	**L1**
	(OR)			
7.	Explain the curvilinear motion equations of a rigid body.	**10M**	**CO5**	**L2**

8.	Explain the work energy method with example.	**10M**	**CO5**	**L1**
	(OR)			
9.	A truck of mass 15 tones travelling at 1.6 m/s impacts with a buffer spring, which compresses 1.25 mm per kN. Find the maximum compression of the spring?	**10M**	**CO5**	**L3**

L1-Remembering; L2-Understanding; L3-Applying; L4-Analyzing; L5-Evaluating; L6-Creating

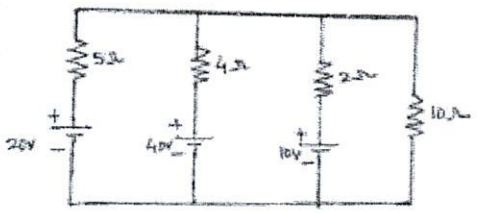
K.S.R.M. COLLEGE OF ENGINEERING, KADAPA (Autonomous) B. Tech II Mid Term Examinations of JUNE – 2024						Dept: EEE; Academic Year 2023 –2024
Course Code:	2302202	Course:	ELECTRICAL CIRCUIT ANALYSIS-1			
Mid Term:	II	Marks:	50	Regulation:	R23UG	Duration: 120Minutes
Semester	II	Section:	EEE(only Section)			Date: 28-06-2024

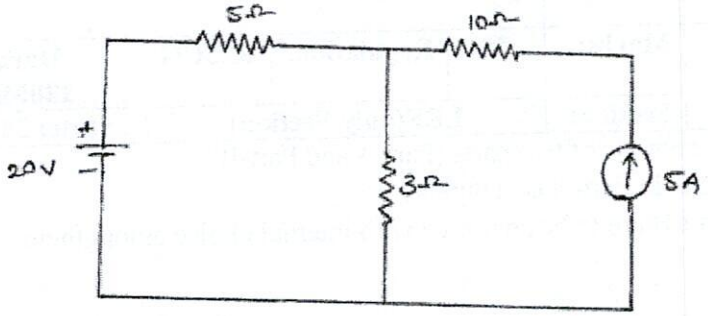
Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice amongthem.

PART-A 05*02 = 10 Marks

Q.No	Question(s)	Marks	CO	BL
1(a)	Define Resonance.	2M	CO4	L2
(b)	Difference between symmetrical and unsymmetrical waveform	2M	CO3	L2
(c)	Write the significance of j operator in detail	2M	CO3	L2
(d)	Write statement of Reciprocity theorem	2M	CO5	L3
(e)	Write statement of superposition theorem	2M	CO5	L3

PART-B 04*10 = 40Marks

Q.No	Question(s)	Marks	CO	BL
2	Define a) wave shape b) angular velocity c) cycle d) time period e) frequency	10M	CO3	L2
	(OR)			
3	Obtain the average valve and rms valve of sinusoidal waveform	10M	CO3	L3
4	Prove that power consumed by inductor and capacitor is zero	10M	CO3	L3
	(OR)			
5	Write the complete analysis of series RL and RC circuit	10M	CO3	L3
6	Obtain the expression for resonant frequency, bandwidth and Q-factor for Series R-L-C circuit	10M	CO4	L3
	(OR)			
7	A series RLC circuit has R=2Ω, L=2.0mH and C=10μF. The applied voltage is 100V. Find (a) Resonant frequency & Quality factor of a coil (b) Bandwidth (c) Upper and lower Half power frequencies (d) Current at resonance & current at half power points	10M	CO4	L4
8	State the Millimans theorem. Find the current in the 10Ω Resistor for the circuit shown in figure(c) using the Millimans theorem.  Fig. (c)	10M	CO5	L4

	(OR)			
9	Find the current passing through 3Ω Resistor for the circuit shown below in Fig(a) by using Superposition Theorem?  Fig. (a)	10M	CO5	L4

- R-Remember (L1)
- U-Understanding(L2)
- A-Apply(L3)
- Az- Analysing (L4)
- E-Evaluating (L5)
- C-Create(L6)

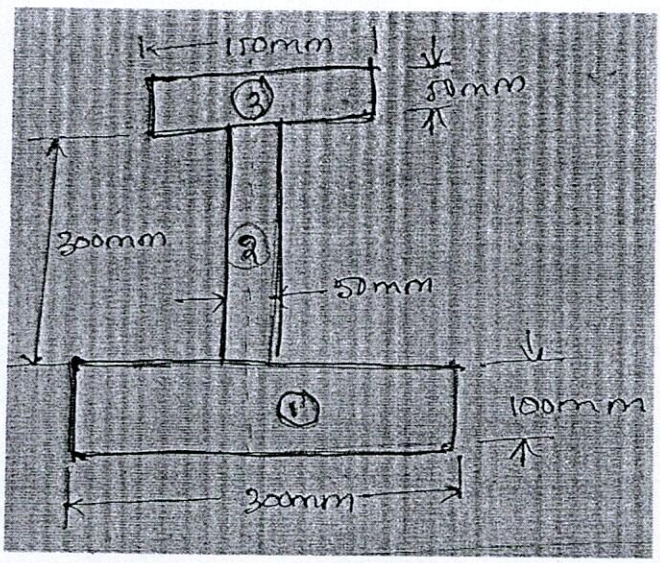
K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of JUNE – 2024							Dept.:	ME
							Academic Year	2023 – 2024
Subject Code	:	23EM204	Subject:	ENGINEERING MECHANICS				
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	Mechanical Engineering			Date: 28-06-2024	

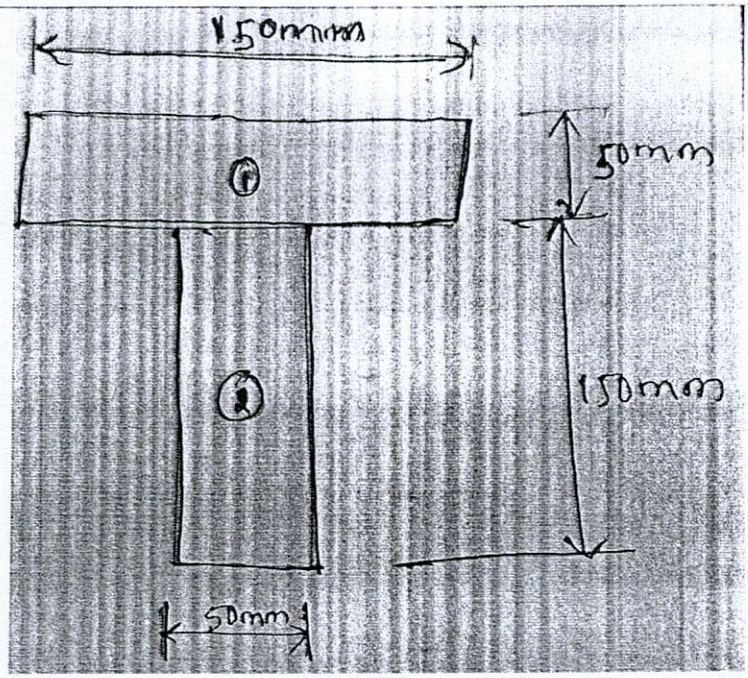
Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among

PART-A 05*02 = 10 Marks

Q.	Question (s)	Marks	CO	BL
1 (a)	Define centre of Gravity of a body?	2 M	CO3	L1
(b)	Define moment of inertia of a body?	2 M	CO3	L1
(c)	Define work done of a body?	2 M	CO4	L1
(d)	Point out the three equations of rectilinear motion under uniform acceleration?	2 M	CO4	L4
(e)	A machine gun of mass 25kg fires a bullet of mass 30grams with a velocity of 250m/s. find the velocity with which the machine gun will recoil?	2 M	CO5	L5

PART-B 04*10 = 40 Marks

Q.	Question (s)	Marks	CO	BL
2.	An I-section has the following dimensions in mm bottom flange=300x100 top flange =150x50 web=300x50.Caluculate the Centre of gravity of the section? 	10M	CO3	L3
	(OR)			
3.	Find the moment of inertia of a T-section with flange as 150mmx50mm and we as 150mmx50mm about x-x axis through the C.O.G of the section?	10M	CO3	L3



4.	How to find the Centre of gravity a uniform rod, triangle, square, rectangle, Circle?	10M	CO3	L3
	(OR)			
5.	(a) Find the moment of inertia of a circular section of 50mm diameter about an axis passing through its centre? (5M) (b) a triangular section ABC has base width 80mm and height 60mm. determine the M.O.I o f the section about the C.O.G of the section & the base BC (5M)	10M	CO3	L3

6.	A train starts from rest and attains a velocity of 45kmph in 2minutes with uniform acceleration. Calculate i) acceleration ii) distance traveled iii) time required to reach a velocity of 36kmph	10M	CO4	L5
	(OR)			
7.	Derive the equations of rectilinear motion under the uniform acceleration	10M	CO4	L3

8.	A horse pulling a cart exerts a steady horizontal pull of 300N and walks at the rate of 4.5kmph. Calculate how much work is done by the horse in 5minutes?	10M	CO4	L5
	(OR)			
9.	(a) Write D'Alembert's principle? (5M) (b) derive impulse-momentum equation? (5M)	10M	CO5	L3

K.S.R.M. COLLEGE OF ENGINEERING, KADAPA (Autonomous) B. Tech Mid Term Examinations JUNE – 2024							Dept.: ECE; Academic Year 2023 – 2024
Course Code	:	2304204	Course:	Network Analysis			
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Minutes
Semester	:	II	Section:	Common to All Branches			Date: 28-06-2024

Note: 1. Question Paper consists of two parts (Part-A and Part-B)

2. Answering the questions in Part-A is compulsory

3. All Questions from Part B are to be answered with internal choice among them.

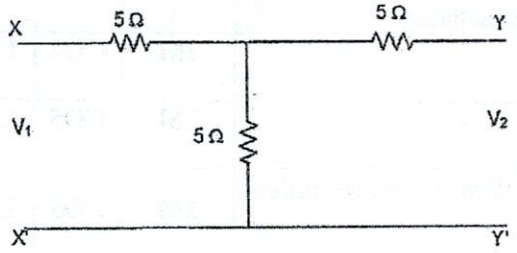
PART-A **05*02 = 10 Marks**

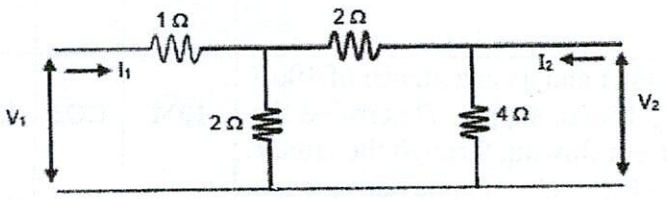
Q.No	Question(s)	Marks	CO	BL
1.(a)	Write the reciprocal term for each of the following (i) Resistance (ii) Inductance (iii) Capacitance (iv) Reactance	2M	CO3	L1
(b)	Define coefficient of coupling.	2M	CO4	L1
(c)	Write about image impedance.	2M	CO5	L1
(d)	What are called transmission line parameters? Why they are called so?	2M	CO5	L1
(e)	Define Q – factor.	2M	CO4	L1

PART-B **04*10 = 40 Marks**

Q.No	Question(s)	Marks	CO	BL
2	A resistor of 150Ω, inductance of 200mH and a capacitance of 10μF are connected in series across 500V, 150Hz supply. Determine the following (i) Impedance (ii) current flowing through the circuit (iii) power factor (iv) voltage across R,L &C (v) power in watts	10M	CO3	L5
	(OR)			
3	Derive AC transient response for a series RC circuit.	10M	CO3	L2
4	Determine the Q-factor of a coil in the parallel and series RLC circuit.	10M	CO4	L3

	(OR)			
5	A series RLC circuit has R=10Ω, L=0.5H and C=40μF. The applied voltage is 100V. Find (a) Resonant frequency & Quality factor of a coil (b) Bandwidth (c) Upper and lower Half power frequencies (d) Current at resonance & current at half power points (e) Voltage across inductance & voltage across capacitance at resonance.	**10M**	**CO4**	**L5**

6	Derive the Z-parameters of two port network. Relate Y, h and ABCD parameters with Z-parameter.	**10M**	**CO5**	**L3**
	(OR)			
7	Derive the Z and Y-parameters of two port network 	**10M**	**CO5**	**L5**

8	For the circuit shown in figure below, compute its z- parameters and convert them into hybrid parameters 	**10M**	**CO5**	**L5**
	(OR)			
9	Derive the expression for coefficient of coupling and Explain dot rule in inductors.	**10M**	**CO4**	**L3**

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of June – 2024							Dept.:	Common to CSE,AIML
							Academic Year	2023 – 2024
Subject Code	:	2305202	Subject:	Data Structures				
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	-			Date: 28th June - 2024	

Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

PART-A **05*02 = 10 Marks**

Q. No	Question (s)	Marks	CO	BL
1 a	Define circular queue.	2 M	CO3	L1
b	Discuss any two advantages of Deques.	2 M	CO3	L2
c	Convert the following infix expression to postfix expression. a*b+c/d-e	2 M	CO4	L1
d	What is hashing.	2 M	CO5	L2
e	What is collision.	2 M	CO5	L1

PART-B **04*10 = 40 Marks**

2	a	Define Stack and also discuss its properties.	5M	CO3	2
	b	Discuss and implement a program to solve postfix expression evaluation using stack.	5M	CO3	1
		OR			
3	a	Illustrate Stack operations using linked list.	5M	CO3	3
	b	Discuss any four applications of stack.	5M	CO3	1
4	a	Define Queue and also discuss different types of queues.	5M	CO3	2
	b	Illustrate queue operations using an array with an example.	5M	CO3	1
		OR			
5	a	Discuss queue properties and implement any one application of queue.	5M	CO3	1
	b	Define Deques and discuss its applications.	5M	CO3	2
6	a	Define Binary tree and its properties.	5M	CO4	2
	b	Illustrate Binary tree traversal with an example.	5M	CO4	3
		OR			
7	a	Discuss and implement Binary Search Tree insertion and deletion operations.	5M	CO4	1
	b	Construct binary search tree for the following data. 12,4,5,78,56,8,9,19,45,18,3.	5M	CO4	3
8	a	Explain about various Hash functions with suitable example.	5M	CO5	1
	b	Define collision and explain about separate chaining collision resolving technique with an example.	5M	CO5	2
		OR			
9	a	Illustrate hash function and hash table with an example.	5M	CO5	3
	b	Discuss in detail about linear probing collision resolving technique.	5M	CO5	1

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of June – 2024							Dept.:	Common to Civil & Mechanical
							Academic Year	2023 – 2024
Subject Code	:	23EC202	Subject:	Engineering Chemistry				
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	-			Date: 29-06-2024	

Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

PART-A

05*02 = 10 Marks

Q. No	Question (s)	Marks	CO	BL
1 (a)	Define Fuel and classify them.	2 M	CO3	L2
(b)	Write any four applications of Buna-N	2 M	CO3	L2
(c)	Define composites and mention its types.	2 M	CO4	L1
(d)	Define cloud and pour point.	2 M	CO4	L1
(e)	Write B.E.T. Equation.	2 M	CO5	L1

PART-B

04*10 = 40 Marks

Q. No	Question (s)	Marks	CO	BL
2.	Define polymerisation and explain chain growth polymerisation with an example.	10M	CO3	L4
	(OR)			
3.	Illustrate refining of petroleum with a neat diagram.	10M	CO3	L2
4.	Simplify Setting and Hardening of Cement.	10M	CO4	L4
	(OR)			
5.	Define refractory and explain its properties.	10M	CO4	L2
6.	Discuss the applications of Colloids and nanomaterials.	10M	CO5	L4
	(OR)			
7.	Explain Solvothermal process for synthesis of nanometals.	10M	CO5	L5
8.	Explain the synthesis, properties and applications of Bakelite.	10M	CO3	L5
	(OR)			
9.	a) List any five differences between Thick film and thin film mechanism. b) Write short on Octane number and Cetane number	5 M 5 M	CO4 CO3	L4 L2

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of June – 2024							Dept.:	Common to ECE
							Academic Year	
							2023 – 2024	
Subject Code	:	2323202	Subject:	Chemistry				
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	A, B & C			Date: 29-06-2024	

Note: 1. Question Paper consists of two parts (Part-A and Part-B)

2. Answering the questions in Part-A is compulsory

3. All Questions from Part B are to be answered with internal choice among them.

PART-A **05*02 = 10 Marks**

Q. No	Question (s)	Marks	CO	BL
1 (a)	Define battery and classify them.	2 M	CO3	L2
(b)	Draw the cell diagram for Galvanic Cell	2 M	CO3	L2
(c)	Define Monomer and Polymer. Give an example for each.	2 M	CO4	L1
(d)	List any four applications of Buna-S	2 M	CO4	L1
(e)	State Beer Lamberts law	2 M	CO5	L2

PART-B **04*10 = 40 Marks**

Q. No	Question (s)	Marks	CO	BL
2.	Derive Nernst Equation.	10M	CO3	L5
	(OR)			
3.	Evaluate the importance of amperometric and potentiometric sensors with example.	10 M	CO3	L5
4.	Define addition polymerisation and explain Ionic polymerisation with example.	10M	CO4	L4
	(OR)			
5.	Explain the synthesis, properties and applications of Bakelite	10 M	CO4	L4
6.	Discuss in brief about instrumentation and principle involved in High Performance Liquid Chromatography. Write short notes on its applications.	10M	CO5	L5
	(OR)			
7.	Explain different types of molecular vibrations involved in IR spectroscopy.	10M	CO5	L4
8.	a) Describe discharging process involved in Zinc air battery with a neat diagram. b) Write notes on Electronic transitions involved in UV spectroscopy.	5 M 5 M	CO3 CO5	L4 L2
	(OR)			
9.	a) Explain the mechanism of conducting polymers with an example b) List the differences between Thermoplastics and Thermosets.	5 M 5 M	CO4 CO4	L3 L1

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of June – 2024							Dept.:	EEE (RA)
							Academic Year	2023 – 2024
Subject Code	:	2323202	Subject:	Chemistry				
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	----			Date: 29-06-2024	

Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

PART-A

05*02 = 10 Marks

Q. No	Question (s)	Marks	CO	BL
1 (a)	Define battery and classify them.	2 M	CO3	L2
(b)	Draw the cell diagram for Galvanic Cell	2 M	CO3	L2
(c)	Define Monomer and Polymer. Give an example for each.	2 M	CO4	L1
(d)	List any four applications of Buna-S	2 M	CO4	L1
(e)	State Beer Lamberts law	2 M	CO5	L2

PART-B

04*10 = 40 Marks

Q. No	Question (s)	Marks	CO	BL
2.	Derive Nernst Equation.	10M	CO3	L5
	(OR)			
3.	Evaluate the importance of amperometric and potentiometric sensors with example.	10 M	CO3	L5
4.	Define addition polymerisation and explain Ionic polymerisation with example.	10M	CO4	L4
	(OR)			
5.	Explain the synthesis, properties and applications of Bakelite	10 M	CO4	L4
6.	Discuss in brief about instrumentation and principle involved in High Performance Liquid Chromatography. Write short notes on its applications.	10M	CO5	L5
	(OR)			
7.	Explain different types of molecular vibrations involved in IR spectroscopy.	10M	CO5	L4
8.	a) Describe discharging process involved in Zinc air battery with a neat diagram. b) Write notes on Electronic transitions involved in UV spectroscopy.	5 M 5 M	CO3 CO5	L4 L2
	(OR)			
9.	a) Explain the mechanism of conducting polymers with an example b) List the differences between Thermoplastics and Thermosets.	5 M 5 M	CO4 CO4	L3 L1

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of June – 2024							Dept.:	Common EEE, AIML & CSE
							Academic Year	2023 – 2024
Subject Code	:	2322204	Subject:	Engineering Physics				
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	A,B & C			Date: 29th June 2024 (FN)	

Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

PART-A 05*02 = 10 Marks

Q. No	Question (s)	Marks	CO	BL
1 (a)	Define dielectric polarization and dielectric polarizability.	2 M	CO3	L 1
(b)	Recall magnetic dipole moment.	2 M	CO3	L 1
(c)	Calculate the wavelength associated with an electron raised to a potential of 1600 V.	2 M	CO4	L 3
(d)	What is Fermi energy level?	2 M	CO4	L 1
(e)	Construct the energy band structure of conductors, semiconductors and insulators.	2 M	CO5	L 3

PART-B 04*10 = 40 Marks

Q. No	Question (s)	Marks	CO	BL
2.	What is an internal field? Estimate the internal field of a cubic dielectric structure using Lorentz method.	10M	CO3	L 5
	(OR)			
3.	(a) Outline the origin of magnetic moment of an electron. (b) Construct the hysteresis loop for Ferro magnetic materials and explain in detail.	5M 5M	CO3 CO3	L 2 L 3
4.	Illustrate the behaviour of the particle in a 1-D infinite potential well with neat diagrams.	10M	CO4	L 2
	(OR)			
5.	(a) Describe the electrical conductivity in metals using quantum free electron theory. (b) Outline the expression for density of states.	5M 5M	CO4 CO4	L 2 L 2
6.	(a) Derive the expression for intrinsic carrier concentration (n_i) and Fermi energy level of an intrinsic semiconductor. (b) Distinguish between intrinsic and extrinsic semiconductors.	7M 3M	CO5 CO5	L 3 L 4
	(OR)			
7.	What is Hall effect? Develop the expression for Hall coefficient and list the application of Hall Effect.	10M	CO5	L 3
8.	(a) Develop the expression for Schrodinger time independent wave equations. (b) Discuss the physical significance of wave function.	7M 3M	CO4 CO4	L 3 L 2
	(OR)			
9.	(a) Derive the expression for drift and diffusion currents. (b) Build the Einstein's relation between diffusion coefficient and mobility.	7M 3M	CO5 CO5	L 3 L 3

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of July – 2024							Dept.:	Common to All Branches
							Academic Year	2023 – 2024
Subject Code	:	2005207	Subject:	Introduction to Programming				
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	ECE(A, B, C) , CE, ME			Date: 1st July – 2024	

Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

PART-A **05*02 = 10 Marks**

Q. No	Question (s)	Marks	CO	BL
1 (a)	Define Command line arguments?	2 M	3	L1
(b)	Define a Ponter with syntax?	2 M	4	L2
(c)	What are the list of storage Classes?	2 M	3	L3
(d)	Difference between Structures and unions ?	2 M	4	L1
(e)	Explain the types of functions with example?	2 M	4	L3

PART-B **04*10 = 40 Marks**

Q. No	Question (s)	Marks	CO	BL
2.	A) Explain different types of Arrays with Syntax and Advantages ? B) Write a program to print the minimum and maximum value of array .	5M 5M	3 5	L3 L5
	(OR)			
3.	A) Define string? List out some of string handling functions? B) Write a program to print the string in reverse.	5M 5M	3 5	L2 L5
4.	Explain about storage classes? With suitable examples ?	10M	4	L3
	(OR)			
5.	A) Define Pointer and its operators. B) Write a program to find out swapping of two numbers by using pointers?	5M 5M	4 5	L1 L5
6.	Explain about the Dynamic and Static Memory Allocation. And Explain below functions. A) malloc() B) calloc() C) realloc() D) free()	10M	4	L2
	(OR)			
7.	Define a structure with an example.	10M	4	L3
8.	Define recursion? Write a program to find out factorial of a given number by using recursion?	10M	5	L3
	(OR)			
9.	Define file? Explain different types of file operations with example program?	10M	5	L2

L1 - Remembering L2 - Understanding L3 - Applying
L4 – Analyzing L5 – Evaluating L6 – Creating

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of JUNE – 2024							Dept.: EEE Academic Year 2023 – 2024
Subject Code	:	23EE106	Subject:	Basic Electrical & Electronics Engineering			
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	EEE			Date: 1st JULY 2024

Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

PART-A **05*02 = 10 Marks**

Q. No	Question (s)	Marks	CO	BL
1 (a)	What is tariff?	2 M	CO2	L1
(b)	Differentiate renewable and non-renewable sources	2 M	CO2	L1
(c)	PMMC meters are used for which type of supply?	2 M	CO1	L1
(d)	State the need of multistage amplifier.	2 M	CO2	L2
(e)	Convert 10101010 to Gray code.	2 M	CO3	L1

PART-B **04*10 = 40 Marks**

Q. No	Question (s)	Marks	CO	BL
2.	Explain the working of PMMC instrument with neat diagram	10M	CO1	L3
	(OR)			
3.	Explain about Hydel Power generation with a neat sketch.	10M	CO3	L2
4.	Explain about simple loop generator	10M	CO2	L3
	(OR)			
5.	Explain in detail about two part tariff with an example and how to calculate electricity bill ?	10M	CO3	L3
6.	(a) With neat diagram Explain public address system. (b) Draw block diagram of electronic instrumentation system	7M 3M	CO2	L2 L2
	(OR)			
7.	Draw block diagram of RC coupled amplifier and Explain it's working and frequency response.	10M	CO2	L3
8.	With neat symbols and truth tables explain all logic gates	10M	CO3	L2
	(OR)			
9.	(a) Explain Half Adder and Full Adder with truth tables (b) Compare combinational and sequential circuits	10M	CO3	L4 L2

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of JUNE/JULY – 2024							Dept.: CSE Academic Year 2023 – 2024
Subject Code	:	23EE206	Subject:	Basic Electrical & Electronics Engineering			
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	A,B			Date: 01/07/2024

Note: 1. Question Paper consists of two parts (Part-A and Part-B)

2. Answering the questions in Part-A is compulsory

3. All Questions from Part B are to be answered with internal choice among them.

PART-A **05*02 = 10 Marks**

Q. No	Question (s)	Marks	CO	BL
1 (a)	List the types of 3-phase Induction Motors.	2 M	CO2	L1
(b)	What are the applications of DC Generators.	2 M	CO2	L1
(c)	State the need of Electronic Instrumentation system.	2 M	CO2	L2
(d)	Realize AND,OR gates using NAND gates.	2 M	CO3	L3
(e)	State De Morgan's laws.	2 M	CO3	L2

PART-B **04*10 = 40 Marks**

Q. No	Question (s)	Marks	CO	BL
2.	With neat diagram, explain about various parts in DC Machine.	10M	CO2	L2
	(OR)			
3.	Explain the construction and working principle of Permanent Magnet Moving Coil instruments.	10M	CO2	L2
4.a	Define Tariff. Explain Two-part tariff briefly.	5M	CO3	L3
4.b	A consumer has a maximum demand of 200 kW at 40% load factor. If the tariff is Rs. 200 per kW of maximum demand plus 10 paise per kWh, find the overall cost per kWh.	5M	CO3	L4
	(OR)			
5.a	With neat diagram, explain about Hydro Power Station.	5M	CO3	L3
5.b	Explain the working principle of Fuse.	5M	CO3	L2
6.	Draw block diagram of RC coupled amplifier and Explain it's working and frequency response.	10M	CO2	L3
	(OR)			
7.	Explain Public Address system.	10M	CO2	L3
8.	Explain flip-flops with logic diagrams and truth tables.	10M	CO3	L3
	(OR)			
9.	Draw and Explain logic gates by using symbol, truth table and boolean expression?	10M	CO3	L3

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of June/July – 2024							Dept.:	CSE
							Academic Year	
							2023 – 2024	
Subject Code	:	23EE206	Subject:	Basic Electrical & Electronics Engineering				
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	C			Date: 01/07/2024	

Note: 1. Question Paper consists of two parts (Part-A and Part-B)

2. Answering the questions in Part-A is compulsory

3. All Questions from Part B are to be answered with internal choice among them.

PART-A **05*02 = 10 Marks**

Q. No	Question (s)	Marks	CO	BL
1 (a)	List the types of 3-phase Induction Motors.	2 M	CO2	L1
(b)	What are the applications of DC Generators?	2 M	CO2	L1
(c)	Realize AND, OR gates using NAND gates.	2 M	CO2	L3
(d)	Convert 10001010 from Binary to Gray code.	2 M	CO3	L2
(e)	Explain Flip-flops.	2 M	CO3	L2

PART-B **04*10 = 40 Marks**

Q. No	Question (s)	Marks	CO	BL
2.	With neat diagram, explain about various parts in DC Machine.	10M	CO2	L2
	(OR)			
3.	Explain the construction and working principle of Permanent Magnet Moving Coil instruments.	10M	CO2	L2
4.a	Define Tariff. Explain Two-part tariff briefly.	5M	CO3	L3
4.b	A consumer has a maximum demand of 200 kW at 40% load factor. If the tariff is Rs. 200 per kW of maximum demand plus 10 paise per kWh, find the overall cost per kWh.	5M	CO3	L4
	(OR)			
5.a	With neat diagram, explain about Hydro Power Station.	5M	CO3	L3
5.b	Explain the working principle of Fuse.	5M	CO3	L2
6.	Draw block diagram of RC coupled amplifier and Explain it's working and frequency response.	10M	CO2	L3
	(OR)			
7.	Explain Public Address system.	10M	CO2	L3
8.	List out the difference between combinational and sequential circuits.	10M	CO3	L3
	(OR)			
9.	With neat symbols and truth tables explain any five logic gates	10M	CO3	L3


KSRMCE AUTONOMOUS
Examination
Section
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K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of JULY – 2024							Dept.: CSE(RA) Academic Year 2023 – 2024
Subject Code	:	23CM205	Subject:	BCME			
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	---			Date: 01-07-2024

Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

PART-A **05*02 = 10 Marks**

Q. No	Question (s)	Marks	CO	BL
1 (a)	Define bearings? List out the angular measurements.	2 M	CO2	L1
(b)	What are the main 3 differences between flexible pavements and rigid pavements?	2 M	CO3	L1
(c)	Define camber and precipitation?	2 M	CO3	L1
(d)	List out the advantages of CNC machines?	2 M	CO2	L2
(e)	Classify different types of power plants?	2 M	CO3	L2

PART-B **04*10 = 40 Marks**

Q. No	Question (s)	Marks	CO	BL
2.	Differentiate between Prismatic compass and Surveyor compass	10M	CO2	L2
	(OR)			
3.	In running fly levels from a bench-mark of RL 140.625, the following readings were obtained: Back sight ----1.255, 2.265, 1.295, 2.995 Fore sight ----0.265, 2.535, 1.395, 2.639 Calculate the levels by using HI Method	10M	CO2	L3
4.	Write the importance of transportation in Nation's economic development?	10M	CO3	L2
	(OR)			
5.	Define hydrology? Briefly explain about hydrological cycle with neat sketch?	10M	CO3	L1
6.	Sketch the working principle of 4-stroke petrol engine?	10M	CO2	L4
	(OR)			
7.	List out various components Electric vehicle?	10M	CO2	L3
8.	With the help of a neat sketch explain about hydro-electric power plant?	10M	CO3	L2
	(OR)			
9.	Robots are superior to human-justify ?	10M	CO3	L4

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of JUNE – 2024							Dept.: AI&ML; Academic Year 2023 – 2024
Subject Code	:	23EE106	Subject:	Basic Electrical & Electronics Engineering			
Mid Term	:	II	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	-----			Date: 1st JULY 2024

Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

PART-A 05*02 = 10 Marks

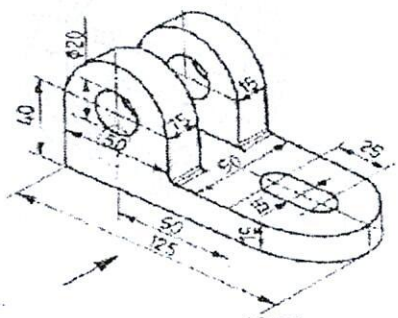
Q. No	Question (s)	Marks	CO	BL
1 (a)	List the types of 3-phase Induction Motors.	2 M	CO2	L1
(b)	What are the applications of DC Generators.	2 M	CO2	L1
(c)	What is earthing and it's types.	2 M	CO2	L1
(d)	State the need of multistage amplifier.	2 M	CO2	L2
(e)	Convert 10101010 to Gray code.	2 M	CO3	L1

PART-B 04*10 = 40 Marks

Q. No	Question (s)	Marks	CO	BL
2.	With neat diagram, explain about various parts in DC Machine.	10M	CO2	L2
	(OR)			
3.	Explain the construction and working principle of Permanent Magnet Moving Coil instruments.	10M	CO2	L2
4.	(a) Define Tariff. Explain Two-part tariff briefly. (b) A consumer has a maximum demand of 200 kW at 40% load factor. If the tariff is Rs. 200 per kW of maximum demand plus 10 paise per kWh, find the overall cost per kWh.	10M	CO3	L3 L4
	(OR)			
5.	(a) With neat diagram, explain about Hydro Power Station. (b) Explain the working principle of Fuse.	10M	CO3	L3 L2
6.	(a) With neat diagram Explain public address system. (b) Draw block diagram of electronic instrumentation system	7M 3M	CO2	L2 L2
	(OR)			
7.	Draw block diagram of RC coupled amplifier and Explain it's working and frequency response.	10M	CO2	L3
8.	With neat symbols and truth tables explain all logic gates	10M	CO3	L2
	(OR)			
9.	(a) Explain Half Adder and Full Adder with truth tables (b) Compare combinational and sequential circuits	10M	CO3	L4 L2

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of June/July– 2024							Dept.: M.E; Academic Year 2023 – 2024
Subject Code	:	2303208	Subject :	Engineering Graphics			
Mid Term	:	II	Marks:	30	Regulation:	R23UG	Duration: 120 Min.
Semester	:	II	Section:	Common for CSE A, B, C & EEE.AIML			Date: 02/07/24 FN

Note: 1. All Questions Carry Equal Marks.& all dimensions are in mm
2. Answering Any Three questions among Six Questions.
3. All Questions are to be answered with internal choice among them

Q.No	Question (s)	Marks	CO	BL
1	Draw the projections of a hexagonal prism of base 25 and side axis 60 long, when it is resting on one of its corners of the base on HP the axis of the solid is inclined at 45° to HP	10 M	CO3	L4
	(OR)			
2.	A pentagonal pyramid of base 25 side and axis 60 long, is resting on an edge of the base on HP draw the projections of the pyramid when its axis is perpendicular to VP and the base is at 15 from the VP.	10M	CO3	L3
3.	A cylinder of diameter of base 40 and axis 55 long, is resting on its base on HP it is cut by a section plane, perpendicular to VP and inclined at45°to HP the section plane is passing through the top end of an extreme generator of the cylinder draw the development of the lateral surface of the cut cylinder	10M	CO4	L6
	(OR)			
4.	A pentagonal pyramid with side of base 30 and axis 60 long, is resting with its base on HP and one of the edges of its base perpendicular to VP it is cut by a section plane parallel to HP and passing through the axis at a point 35 above the base draw the projection of the remaining solid	10M	CO4	L4
5	Use the given isometric diagram and develop the frontview, topview and right side view. 	10M	CO5	L6
	(OR)			
6	Draw the isomeric view of a square prism,with side of base 40 and length of the axis 70,when its axis is i)vertical and ii)horizontal.	10M	CO5	L4

L1 - Remembering **L2 - Understanding** **L3 - Applying**
L4 - Analysing **L5 - Evaluating** **L6 - Creating**

Website