K.S.R.M. COLLEGE OF ENGINEERING, KADAPA (Autonomous) B. Tech Mid Term Examinations of April – 2024							Dept.:	H & S
							Academic Year	2023 – 2024
Course Code	:	2321201	Course:	DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS				
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Minutes	
Semester	:	II	Section:	Common to All Branches			Date: 1ST April, 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)	Solve $x\,dy - y\,dx = xy^2dx.$	2M	CO1	L3
(b)	Solve $x\,dx + y\,dy = \frac{a^2(x\,dy - ydx)}{x^2+y^2}$	2M	CO1	L3
(c)	Find the integrating factor of $y' + y = e^{e^x}.$	2M	CO1	L1
(d)	Find the Wronskian for the differential equation$(D^2 - 2D)y = e^x sinx.$	2M	CO2	L1
(e)	Solve $(D^4 + 8D^2 + 16)y = 0.$	2M	CO2	L3

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

Q. No	Question(s)	Marks	CO	BL
2	(a) Solve $(1 + y^2)dx = (tan^{-1}y - x)dy.$ (b) Solve $x\frac{dy}{dx} + y = x^3y^6.$	5M 5M	CO1 CO1	L3 L3
	(OR)			
3	(a) Solve $(1 + 2xycosx^2 - 2xy)dx + (sinx^2 - x^2)dy = 0$ (b) Solve $(y\,logy)dx + (x - logy)dy = 0.$	5M 5M	CO1 CO1	L3 L3

4	A body is originally at 80°c cools down to 60°c in 20 minutes, the temperature of the air being 40°c. Determine the temperature of the body after 40 minutes from the original?	10M	CO1	L5
	(OR)			
5	Uranium disintegrates at a rate proportional to the amount then present at any instant. If M_1 and M_2 grams of uranium are present at time T_1 and T_2 respectively. Determine the half-life of uranium.	10M	CO1	L5

6	Solve $(D^2 - 2D + 4)y = e^x cosx.$	10M	CO2	L3
	(OR)			
7	Solve $(D-2)^2 y = 8(e^{2x} + sin2x + x^2)$	10M	CO2	L3

8	Solve $(D^2 - 4D + 4)y = 8x^2 e^{2x} sin2x.$	10M	CO2	L3
	(OR)			
9	Using the method of variation of parameters, solve $\frac{d^2y}{dx^2} + 4y = tan2x$	10M	CO2	L3

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of April – 2024							Dept.:	Common to Civil & Mechanical
							Academic Year	2023 – 2024
Subject Code	:	23EC202	Subject:	Engineering Chemistry				
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	-			Date: 2nd April 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 & classify them	2 M	CO2	L2
(b)	Define Dry corrosion and write its types.	2 M	CO2	L2
(c)	List any two differences between Electroplating & Electroless plating	2 M	CO2	L1
(d)	Define Hardness. Mention its units.	2 M	CO1	L1
(e)	Write the expression for Hardness of water.	2 M	CO1	L1

PART-B

04*10 = 40 Marks

Q. No	Question (s)	Marks	CO	BL
2.	Estimate the amount the Hardness present in water sample by EDTA Method.	10M	CO1	L5
	(OR)			
3.	A sample of water on analysis has been found to contain the following salts. Calculate Temporary Hardness, Permanent Hardness and Total Hardness in terms of Degree Clark. $Ca(HCO_3)_2$ = 15.5 PPM, . $Mg(HCO_3)_2$ = 17.5 PPM, $CaSO_4$ = 10.5 PPM, $CaCl_2$ = 9.2 PPM (Molecular weights - $Ca(HCO_3)_2$ =162, $Mg(HCO_3)_2$ = 146, $CaSO_4$ = 136, $CaCl_2$ = 111)	10M	CO1	L3
4.	Simplify Ion Exchange process with a neat diagram.	10M	CO1	L4
	(OR)			
5.	Explain Boiler Troubles	10M	CO1	L2
6.	Draw the neat diagram of Zinc air battery and write the discharging & charging process.	10M	CO2	L5
	(OR)			
7.	Describe the factors that influence Corrosion.	10M	CO2	L4
8.	Derive Nernst Equation.	10M	CO2	L5
	(OR)			
9.	Discuss in brief about Electrochemical corrosion method	10M	CO2	L2

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of April – 2024							Dept.: H&S; Academic Year 2023 – 2024
Subject Code	:	2324201	Subject:	Communicative English			
Mid Term	:	I	Marks:	50	Regulation:	R23 UG	Duration: 120 Min
Semester	:	II	Branch:	CSE , AIML&EEE			Date: 02/04/2024 Wed

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 X 02 = 10 Marks**

Q. No	Question (s)	Marks	CO	BL
1 (a)	Who were the Young's, and what were the two possessions that they were proud of?	2 M	CO1	L5
(b)	**Explain the lines;** I chatter, chatter, as I flow, To join the brimming river, For men may come and men may go, But I go on forever.	2 M	CO2	L3
(c)	**Punctuate the following sentence** whos there oh its you	2 M	CO1	L3
(d)	Define homophone with four examples.	2 M	CO1	L5
(e)	**Insert articles where necessary.** i) There is book in my backpack. Book is very heavy. ii) Sun is at highest point in sky at noon.	2 M	CO2	L2

PART-B **04X10 = 40 Marks**

Q. No	Question (s)	Marks	CO	BL
2.	Write a note on the different ways in which O.Henry tells his readers about the financial situation of the couple.	10M	CO1	L5
	(OR)			
3.	a) **Write the meanings/ definitions to the following words.** i) Democracy ii) Autograph b) **Construct a dialogue between a Teacher and a student. Student requests him to improve English communication skills.** c) **Frame any *four* meaningful sentence based on the pattern:** Subject | Verb | Indirect Object | Direct Object Vasu | gave | her | a book	02 M 04 M 04 M	CO1	L2
4.	How has the poet described landscape, flowers, plants and colours in the poem? How does it make you feel as a reader? Substantiate your answer with examples from the poem.	10M	CO2	L5
	(OR)			
5.	a) Write a short paragraph in 120 to 150 words on ***"Actions speak louder than words".***	06M	CO2	L2
	b) **Identify the parts of speech of the underlined words given below.** i) Lakshmi sends e-mails to all her friends now and then. ii) Della shops for two hours.	04 M	CO2	L3
6.	**a) Punctuate the following sentence.** i speak telugu and hindi better than English what about you **b) Spot incorrectly spelt words and write them correctly.** i) acheive ii) parliamant iii) refered iv) dilemma	03M 04M	CO1	L3

	c) Identify the content words and function words to the following. i) They are the magi. ii) Give it to me quick. iii) My hair grows so fast.	3M		
	(OR)			
7.	**a) Rewrite the jumbled words in the correct order.** i) Ringing a man the doorbell is. ii) Rather boring the is book. iii) In the city tall buildings are. iv) To college walk I every day. **b) Fill in the blanks with the correct homophone from the given options in brackets.** i) I bought a _____ of gloves. (pair, pare, pear) ii) The lioness kicked up the _____ of her prey. (sent, scent, cent iii) If you park here, the police will _____ your car away.(tow, toe, to) **c) Fill in the blanks with the correct homonyms from options given in brackets** i) He was _____ skinned.(fair,fare) It was not a _____ deal.(fair,fare) ii) You must not always _____ on him.(bank,bank) She withdrew money from the _____.(bank,bank) iii) Please _____ down.(write,right) the _____ answer.(write,right)	04M 03M 03M	CO1	L2
8.	**A) Arrange the following sentences making it into a meaningful paragraph.** a) Add another spoonful of tea leaves if you prefer your tea to e stronger. b) Once spoon per cup should do unless you want it sweeter. c) This will make two cups of tea once the milk is added later. d) When the water begins to boil, add a teaspoonful of tea leaves to it and let it simmer for a minute. e) your tea is ready to enjoy f) put one and a half a cup of milk and sugar to taste . g) Strain the tea and add half a cup of milk and sugar to taste. h) Light the stove and place the pan on it.	06M	CO2	L4
	B) a) **Give the antonyms to the following.** i) Active ii) Lend b) **Give the synonyms to the following.** i) Back ii) Clever c) **Add prefix to the following.** i) ___ graph ii) ____graduate. d) **Add suffix to the following.** i) child____ ii) great____	04M	CO1	L1
	(OR)			
9	**a) Correct the following sentences where necessary.** i) He have a factory in London. ii) The English is his favourite subject. iii) Why are you going to college daily? iv) She does not own the car. v) I saw a eagle fly by. **b) Fill in the blankss with suitable prepositions and articles.** Could you get me ____ kilogram tea, please.It is _____awe inspiring sight to see ____ Brahmaputra in spate. They go ____ the office ____ train.	5M 5M	CO1	L2

RA

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of April – 2024							Dept.:	Common to Civil & Mechanical
							Academic Year	2023 – 2024
Subject Code	:	23EC202	Subject:	Engineering Chemistry				
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	-			Date: 2nd April 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 & classify them	2 M	CO2	L2
(b)	Define Dry corrosion and write its types.	2 M	CO2	L2
(c)	List any two differences between Electroplating & Electroless plating	2 M	CO2	L1
(d)	Define Hardness. Mention its units.	2 M	CO1	L1
(e)	Write the expression for Hardness of water.	2 M	CO1	L1

PART-B

04*10 = 40 Marks

Q. No	Question (s)	Marks	CO	BL
2.	Estimate the amount the Hardness present in water sample by EDTA Method.	10M	CO1	L5
	(OR)			
3.	A sample of water on analysis has been found to contain the following salts. Calculate Temporary Hardness, Permanent Hardness and Total Hardness in terms of Degree Clark. $Ca(HCO_3)_2$ = 15.5 PPM, . $Mg(HCO_3)_2$ = 17.5 PPM, $CaSO_4$ = 10.5 PPM, $CaCl_2$ = 9.2 PPM (Molecular weights - $Ca(HCO_3)_2$ =162, $Mg(HCO_3)_2$ = 146, $CaSO_4$ = 136, $CaCl_2$ = 111)	10M	CO1	L3
4.	Simplify Ion Exchange process with a neat diagram.	10M	CO1	L4
	(OR)			
5.	Explain Boiler Troubles	10M	CO1	L2
6.	Draw the neat diagram of Zinc air battery and write the discharging & charging process.	10M	CO2	L5
	(OR)			
7.	Describe the factors that influence Corrosion.	10M	CO2	L4
8.	Derive Nernst Equation.	10M	CO2	L5
	(OR)			
9.	Discuss in brief about Electrochemical corrosion method	10M	CO2	L2

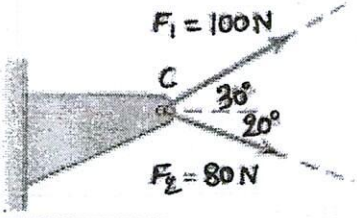
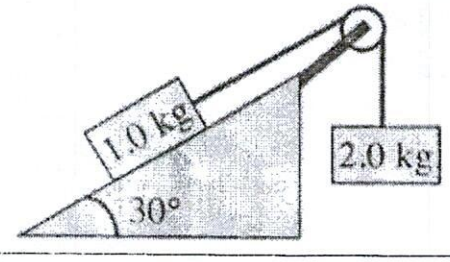
K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of April – 2024							Dept.: CE; Academic Year 2023 – 2024
Subject Code	:	23EM204	Subject:	Engineering Mechanics			
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	A			Date: 03-04-2024

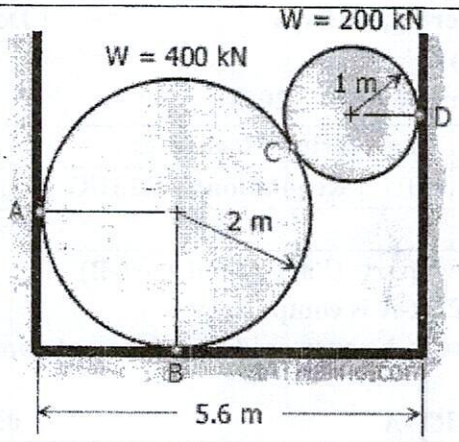
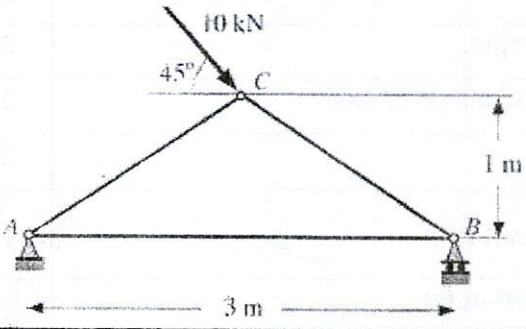
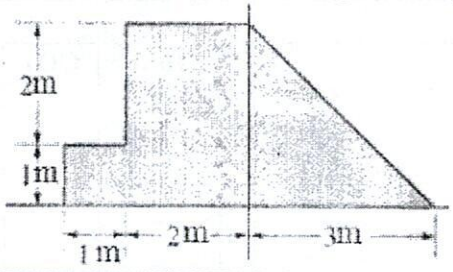
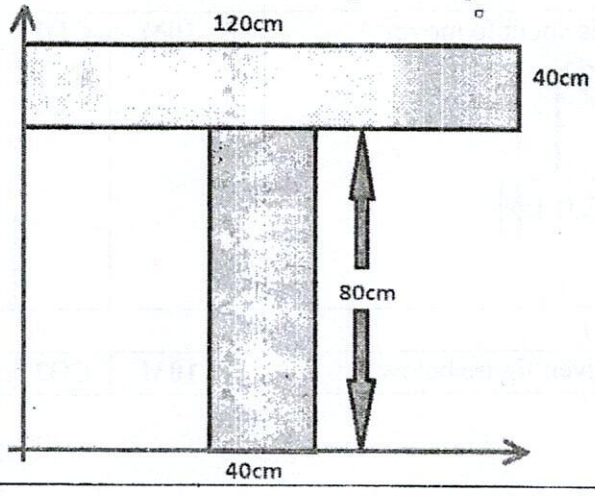
Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

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

Q. No	Question (s)	Marks	CO	BL
1 (a)	Define moment and couple?	2 M	CO1	L1
(b)	What is limiting friction?	2 M	CO1	L1
(c)	Explain free body diagram with example.	2 M	CO2	L1
(d)	List different methods to find the resultant of forces?	2 M	CO2	L1
(e)	Define centroid?	2 M	CO3	L1

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

Q. No	Question (s)	Marks	CO	BL
2.	Explain parallelogram law and derive the equations for resultant of force.	10M	CO1	L2
	(OR)			
3.	Find the resultant of the given force system? 	10M	CO1	L3
4.	Find the coefficient of friction if the 1 kg block is about to move? 	10M	CO1	L3
	(OR)			
5.	Find the reaction at contacts A, B and D in the given figure below?	10M	CO2	L3

				
6.	What is equilibrium? Explain the static equilibrium equations with examples.	**10M**	**CO2**	**L1**
	(OR)			
7.	Find the member forces of the given truss? 	**10M**	**CO2**	**L3**
8.	Find out the centroid of the given shape? 	**10M**	**CO3**	**L3**
	(OR)			
9.	Find out the centroid of the given shape? 	**10M**	**CO3**	**L3**

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

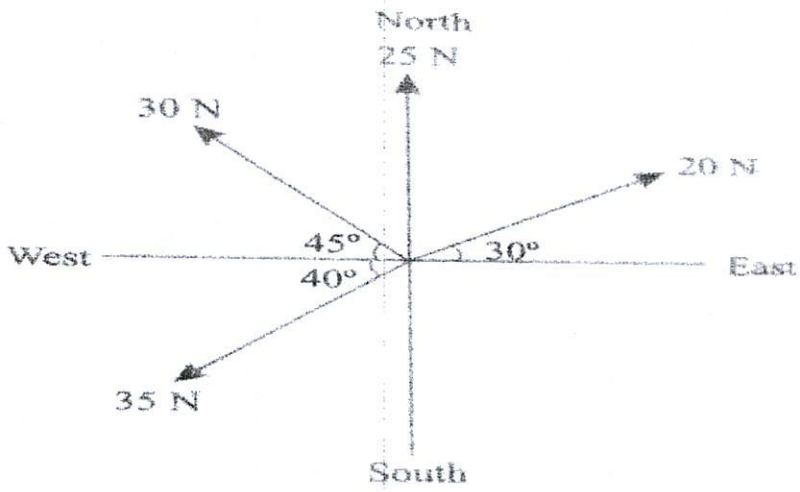
K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of APRIL – 2023							Dept.: ME; Academic Year 2023 – 2024
Subject Code	:	23EM204	Subject:	ENGINEERING MECHANICS			
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	Mechanical Engineering			Date: 03rd APRIL 2024

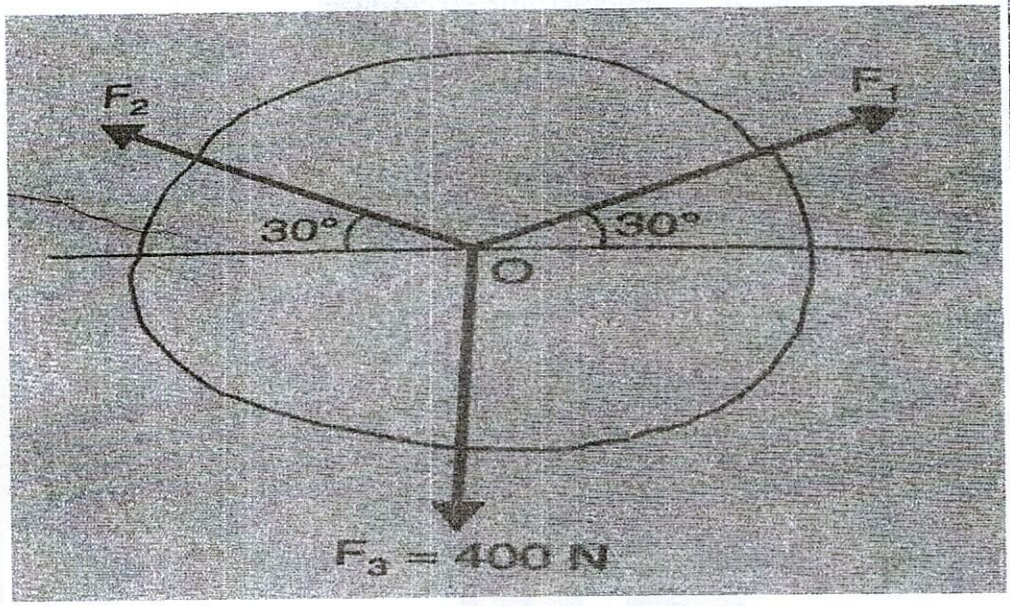
Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among

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

Q. No	Question (s)	Marks	CO	BL
1 (a)	List out the characteristics of force	2 M	CO1	L1
(b)	Define coplanar force system with diagram	2 M	CO1	L1
(c)	Define friction?	2 M	CO1	L1
(d)	List out the principles of equilibrium?	2 M	CO2	L1
(e)	Define Equilibrium?	2 M	CO2	L1

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

Q. No	Question (s)	Marks	CO	BL
2.	illustrate the force system with neat sketches?	10M	CO1	L3
	(OR)			
3.	The force required to pull a body of weight 50N on a rough H.P. Determine the co-efficient of friction if the force is applied at angle of 15^0 with H. P	10M	CO1	L1
4.	Find the magnitude and direction for following diagram 	10M	CO1	L1
	(OR)			
5.	Define a) friction b) moment c) co-efficient friction d) angle of friction	10M	CO1	L1
6.	Analyze the Lami's theorem with neat sketch?	10M	CO2	L4
	(OR)			
7.	Explain a) parallelogram law of forces b) Triangle law of forces c) polygon law of forces d) method of resolution	10M	CO2	L3

8.	Three forces F1, F2, F3 are acting on a body as shown in fig& the body is in equilibrium. if the magnitude of force F3 is 400N.find the magnitude of forceF1&F2  	10M	CO2	L1
	(OR)			
9.	List out the conditions of equilibrium for a coplanar non-concurrent force?	10M	CO2	L1

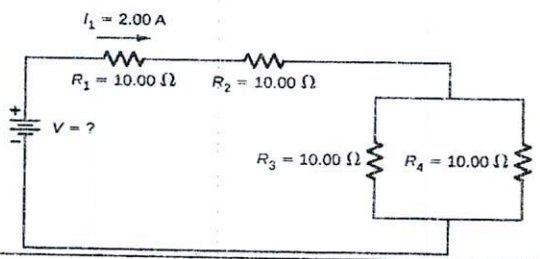
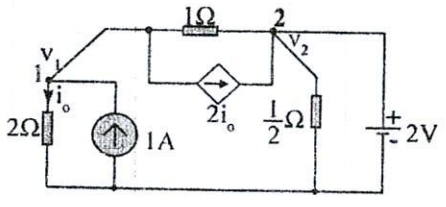
K.S.R.M. COLLEGE OF ENGINEERING, KADAPA (Autonomous) B. Tech I Mid Term Examinations of ~~March~~ APRIL – 2024						Dept: EEE Academic Year 2023 –2024
Course Code:	2302202	Course:	ELECTRICAL CIRCUIT ANALYSIS-1			
Mid Term:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Minutes
Semester	II	Section:	EEE (only Section)			Date: 03-04-2024

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 Circuit and Network	2M	CO1	L1
(b)	State and explain the Kirchoff's Voltage Law	2M	CO2	L2
(c)	Write the classification of dependent source and their symbols	2M	CO2	L2
(d)	Explain the Faradays Laws of electromagnetic induction	2M	CO2	L2
(e)	Define the Self Induced EMF	2M	CO2	L2

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

Q.No	Question(s)	Marks	CO	BL
2	Write voltage and current relations for resistor, inductor and capacitor.	10M	CO1	L2
	(OR)			
3	What is the voltage supplied by the voltage source? 	10M	CO2	L4
4	Derive the transformation from star to delta and delta to star.	10M	CO2	L3
	(OR)			
5	For the circuit shown in figure, find the power loss in the1/2Ω resistor and 1Ω resistor. Also find the value of the dependent source. 	10M	CO4	L4

6	Define the following terms with their mathematical expressions and units (a)MMF (b)Magnetic flux density(c) Magnetic field intensity(d)Reluctance (e)Mutually induced EMF	10M	CO2	L1
	(OR)			
7	What is Dot Convection? Explain all the four cases of dotted ends with circuit diagram and equations?	10M	CO2	L2
8	(a) Analogy between Magnetic circuit and Electrical Circuit (b) Derive the coefficient of coupling	5M 5M	CO2	L2
	(OR)			
9	Explain the Parallel Magnetic Circuits and Parallel Magnetic Circuits with air gap.	10M	CO5	L2

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

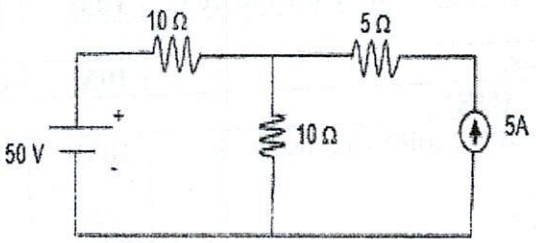
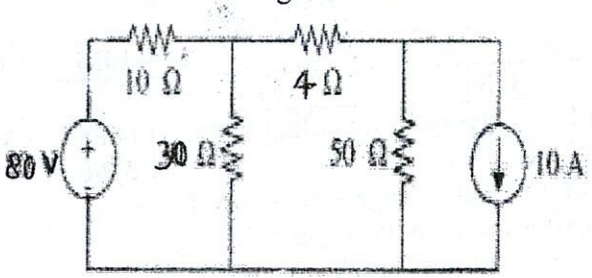
K.S.R.M. COLLEGE OF ENGINEERING, KADAPA (Autonomous) B. Tech Mid Term Examinations of April – 2024							Dept.: ECE; Academic Year 2023 – 2024
Course Code	:	2304204	Course:	Network Analysis			
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Minutes
Semester	:	II	Section:	Common to All ~~Branches~~ Sections			Date: 03-04-2024

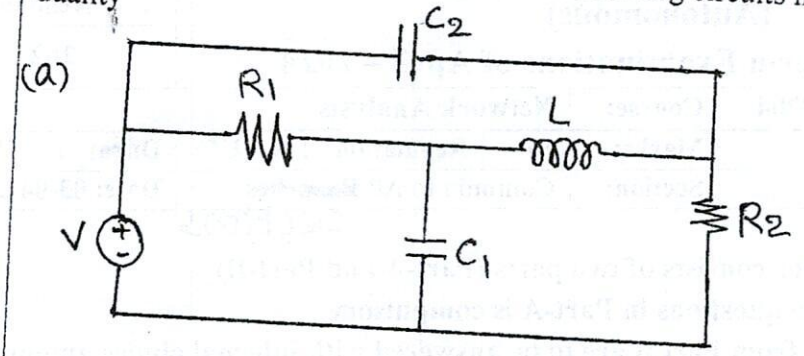
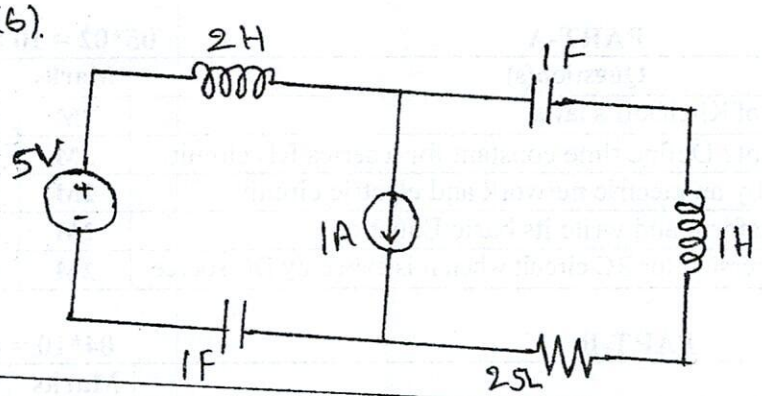
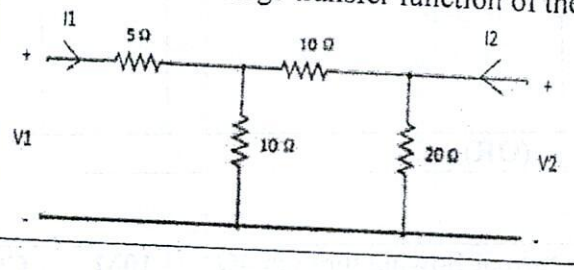
Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

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

Q.No	Question(s)	Marks	CO	BL
1.(a)	Write the Statements of Kirchhoff's laws.	2M	CO1	L1
(b)	What is time constant? Define time constant for a series RL circuit.	2M	CO2	L1
(c)	What do you mean by an electric network and electric circuit?	2M	CO1	L1
(d)	Define Laplace transform and write its basic Equation.	2M	CO2	L2
(e)	Write the current expression for RC circuit when it is exited by DC source	2M	CO5	L5

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

Q.No	Question(s)	Marks	CO	BL
2	Find the branch currentsin the circuit shown below by employing the KCL. 	10M	CO1	L5
	(OR)			
3	Using Superposition theorem find the current flowing through 4Ω resistor in the following circuit. 	10M	CO1	L5

4	Explain Principle of Duality. Convert the following circuits in to its duality (a)  (b).  	(5+5) M	CO1	L2
	(OR)			
5	Explain Maximum power transfer theorem and Milliman's theorem.	10M	CO1	L2
6	Analyze the DC response for RC circuits.	10M	CO2	L5
	(OR)			
7	Determine the voltage transfer function of the following network.  	10M	CO2	L5
8	Analyze the DC response for RL circuits.	10M	CO2	L5
	(OR)			
9	A series RL circuit has R= 25 Ω and L = 5 Henry. A dc voltage V of 100 V is applied to this circuit at t = 0 secs. Find : (a) The equations for the charging current , and voltage across R & L (b) The current in the circuit 0.5 secs after the voltage is applied. (c) The time at which the drops across R and L are equal.	(4+3+3)M	CO2	L5

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of April – 2024							Dept.: CSE Academic Year 2023 – 2024
Subject Code	:	2305202	Subject:	Data Structures			
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	A,B & C			Date: 3rd April 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 an array.	2 M	CO1	L1
(b)	Define abstract data type.	2 M	CO1	L1
(c)	What is Time and Space complexity.	2 M	CO1	L1
(d)	Define Linked list.	2 M	CO2	L1
(e)	Compare array and linked list.	2 M	CO2	L2

PART-B

04*10 = 40 Marks

Q. No	Question (s)	Marks	CO	BL
2.	Discuss linear and non-linear data structure with an example.	10M	CO1	L1
	(OR)			
3.	Write and explain insertion sort algorithm.	10M	CO1	L3
4.	Write binary search program and compare it with linear search.	10M	CO1	L3
	(OR)			
5.	Write and explain Bubble sort algorithm and also discuss its time complexity	10M	CO1	L3
6.	Discuss different types of linked list.	10M	CO2	L1
	(OR)			
7.	Write and discuss single linked list.	10M	CO2	L3
8.	Explain in detail about Double linked list.	10M	CO2	L1
	(OR)			
9.	Explain in detail about Circular linked list.	10M	CO2	L1

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of April – 2024							Dept.: AIML; Academic Year 2023 – 2024
Subject Code	:	2305202	Subject:	Data Structures			
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	-			Date: 3rd April- 2023

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)	Outline a linear and non-linear data structure with an example.	2 M	CO1	L1
(b)	Write any two applications of stack.	2 M	CO1	L2
(c)	Define Sorting.	2 M	CO1	L1
(d)	What are the operations of the stack?	2 M	CO2	L2
(e)	Draw the structure of Double Linked List.	2 M	CO2	L3

PART-B

04*10 = 40 Marks

Q. No	Question (s)	Marks	CO	BL
2.	a. Explain ADT. List the Linear and Non-linear data structures with example.	5M	CO1	L1
	b. Write a program to implement Binary Search on sorted set of Integers.	5M	CO1	L1
	(OR)			
3.	How can you perform the selection sort and sort the following elements by using the selection sort technique 70, 30, 20, 50, 60, 10, 40.	10M	CO1	L1
4.	Outline the steps to search a linked list with an example and relevant diagrams.	5M	CO1	L1
	b. Outline the steps to delete from a linked list with an example and relevant diagrams.	5M	CO1	L1
	(OR)			
5.	What is a linked list? Specify the difference between singly, doubly and circular linked lists.	10M	CO1	L1
6.	Explain the insertion operation in linked list. How nodes are inserted after a specified node.	10M	CO2	L2
	(OR)			
7.	Explain about double linked list with an example.	10M	CO2	L3
8.	Define stack. Implement the operations of stack using arrays.	10M	CO2	L2
	(OR)			
9.	Explain about the properties and operations of a stack using an example.	10M	CO2	L3

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of April – 2024							Dept.: CE, ME.,ECE; Academic Year 2024 – 2025
Subject Code	:	23CM205	Subject:	Basic Civil and Mechanical Engineering			
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	A,B & C			Date: 04-04-2024

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 out the specializations in civil engineering?	2 M	CO1	L1
(b)	List out the materials used in construction?	2 M	CO1	L1
(c)	Define surveying.	2 M	CO2	L1
(d)	Define a composite material?	2 M	CO1	L1
(e)	How do you define a metal?	2 M	CO1	L1

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

Q. No	Question (s)	Marks	CO	BL
2.	Write short note on any three specializations of civil engineering?	10M	CO1	L1
	(OR)			
3.	What are the factors to be consider for building planning?	10M	CO1	L2
4.	What is the role of civil engineering in the society?	10M	CO1	L2
	(OR)			
5.	Write the importance and objectives of surveying?	10M	CO2	L1
6.	Industries play a vital role in Indian Economy-Justify your answer?	10M	CO1	L2
	(OR)			
7.	Highlight the importance of Technology in (a) Energy sector (b) Automotive sector?	10M	CO1	L2
8.	Explain about the classification of metals with Advantages and Applications?	10M	CO1	L2
	(OR)			
9.	Describe how smart materials are utilized in Modern technology?	10M	CO1	L2

K.S.R.M. College of Engineering, Kadapa
(Autonomous)
B. Tech Mid Term Examinations of APRIL – 2024

Dept.:	EEE,CSE,AI&ML						
Academic Year	2023 – 2024						
Subject Code	:	2322204	Subject:	Engineering Physics			
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	A, B & C			Date: 4th APRIL 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 interference of light.	2 M	CO1	L1
(b)	Differentiate between interference and diffraction.	2 M	CO1	L2
(c)	What is meant by double refraction?	2 M	CO1	L1
(d)	What are lattice parameters?	2 M	CO2	L1
(e)	Draw the crystal planes having Miller indices (010) and (111).	2 M	CO2	L2

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

Q. No	Question (s)	Marks	CO	BL
2.	With ray diagram discuss the theory of thin films and the conditions for constructive and Destructive Interference in the case of reflected system.	10M	CO1	L3
	(OR)			
3.	a).What are Newton's rings? Obtain the expression for diameters of bright and dark fringes. b).In Newton rings experiment diameters of 17th and 7th rings are 0.6 cm and 0.3 cm respectively. If radius of curvature of used lens is 125 cm, find the wavelength of incident light.	7M 3M	CO1 CO1	L2 L2
4.	Derive the expression for the principal maxima and secondary maxima for Fraunhofer diffraction due to single slit.	10M	CO1	L4
	(OR)			
5.	Describe the construction and working of a Nicol prism.	10M	CO1	L3
6.	Discuss Seven crystal systems and their Bravais lattices with suitable examples.	10M	CO2	L3
	(OR)			
7.	Show that FCC is most closely packed than SC and BCC.	10M	CO2	L3
8.	a).State Bragg's law. Explain the working of Bragg's X-ray spectrometer. b).Copper has BCC structure and the atomic constant is 0.3615 nm. Calculate the interplanar spacing for (212) plane.	8M 2M	CO2 CO2	L2 L2
	(OR)			
9.	Describe the Powder diffraction method for determining lattice constant of a crystal structure with suitable diagram.	10M	CO2	L5

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of April – 2024							Dept.:	Common to EEE
							Academic Year	
							2023 – 2024	
Subject Code	:	2323202	Subject:	Chemistry				
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	---			Date: 04th April 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 LCAO method.	2 M	CO1	L1
(b)	Write short notes on schrodinger wave equation	2 M	CO1	L1
(c)	Define Bond Order and calculate bond order for N_2 molecule	2 M	CO1	L1
(d)	List the two applications super capacitors.	2 M	CO2	L1
(e)	classify the nanomaterials.	2 M	CO2	L2

PART-B

04*10 = 40 Marks

Q. No	Question (s)	Marks	CO	BL
2.	Derive Schrodinger wave equation for Particle in One Dimensional box	10M	CO1	L4
	(OR)			
3.	Explain molecular orbital diagram for Oxygen molecule and calculate the bond order.	10M	CO1	L5
4.	Explain the π-molecular orbital diagrams of benzene & butadiene	10M	CO1	L4
	(OR)			
5.	Write the plancks quantum theory and debroglie concept.	10M	CO1	L4
6.	Explain different types of Semiconductors and its application.	10M	CO2	L5
	(OR)			
7.	Describe types & applications of Super conductors.	10M	CO2	L4
8.	Explain properties & applications of nanomaterials.	10M	CO2	L5
	(OR)			
9.	Discuss the properties and applications of fullerene and graphene nanoparticles.	10 M	CO2	L4

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of April – 2024							Dept. :	Common to All Branches(CE,ME, ECE)
							Academic Year	
							2023 – 2024	
Subject Code	:	2005207	Subject:	Introduction to Programming				
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	-			Date: 06th April - 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 Variables, and Constants? What are the rules?	2 M	CO1	L1
(b)	What is Type Conversion in C programming?	2 M	CO1	L2
(c)	Write a c program to find if a given number is even or odd?	2 M	CO3	L1
(d)	Write a c program to find the given year is leap year or not?	2 M	CO3	L2
(e)	Differences between while and do while in C?	2 M	CO2	L1

PART-B

04*10 = 40 Marks

Q. No	Question (s)	Marks	CO	BL
2.	A) What is SDLC and draw the neat Diagram. B) How to Create, Saving, Compiling and Executing a C program?	10M	CO1	L1
	(OR)			
3.	What is a computer? Explain different parts of Computer with a neat Block Diagram?	10M	CO1	L1
4.	Explain about Algorithms, flowchart and pseudo code with examples?	10M	CO1	L1
	(OR)			
5.	Define Data type? Explain different types of data types in c language?	10M	CO1	L1
6.	Define the Operator and Explain about various operators available in C Programming.	10M	CO2	L2
	(OR)			
7.	Define loop? Explain different types of loop statements with syntax and examples?	10M	CO2	L3
8.	Explain different conditional control structures in c? Also write each syntax and example.	10M	CO2	L2
	(OR)			
9.	Explain Below A) Top-down approach B) Bottom-up approach	10M	CO1	L3

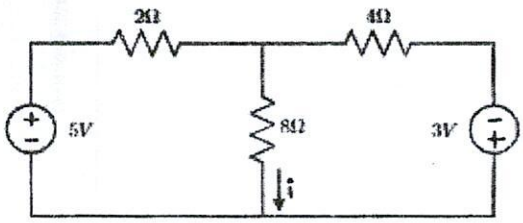
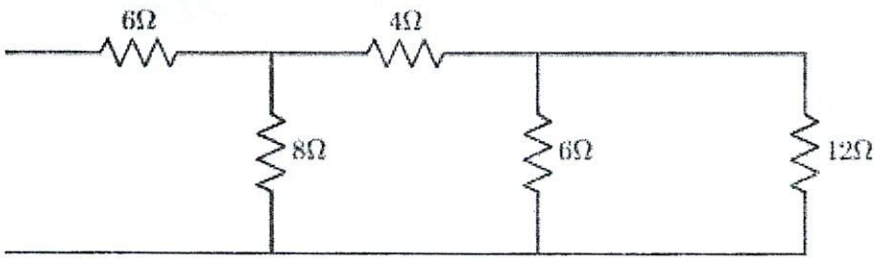
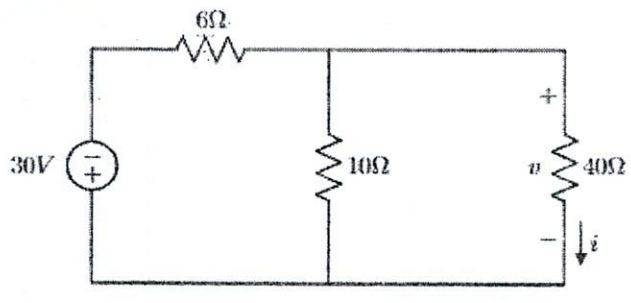
K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of APRIL – 2024							Dept.: EEE; Academic Year 2023 – 2024
Subject Code	:	23EE106	Subject:	Basic Electrical & Electronics Engineering			
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	-			Date: 06/04/2024

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)	Explain the ohm's law.	2 M	CO1	L2
(b)	Define Form Factor and Peak Factor.	2 M	CO1	L2
(c)	List the applications of diode.	2 M	CO1	L1
(d)	What is rectifier and classify it.	2 M	CO2	L2
(e)	Define Amplifier.	2 M	CO1	L1

PART-B 04*10 = 40 Marks

Q. No	Question (s)	Marks	CO	BL
2.	State and Explain Kirchhoff's Laws.	10M	CO1	L2
	(OR)			
3.	Determine the current i and across 8Ω resistor using Superposition theorem in the network shown below. 	10M	CO1	L4
4.a	Define Average Value. Also derive the expression for RMS value of Sinusoidal Voltage Wave form.	5M	CO2	L3
4.b	Determine the equivalent resistance for the following figure?. 	5M	CO2	L3
	(OR)			
5.a	Draw the phasor diagram for the pure inductive coil when it is excited by an AC supply with derivation	5M	CO2	L3
5.b	Find the current flowing through and voltage across 40Ω in the circuit using mesh analysis. 	5M	CO2	L3

6.	Explain briefly about V-I characteristics of P-N junction Diode?	10M	CO2	L2
	(OR)			
7.	Draw the input and output characteristics of CE configuration & Explain in detail using circuit diagram?	10M	CO2	L3
8.	Explain in detail about block diagram description of a DC power supply?	10M	CO1	L2
	(OR)			
9.	With neat block diagram explain full wave bridge rectifier and it's working.	10M	CO2	L3

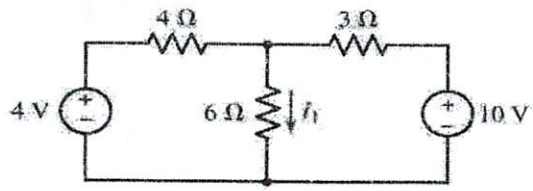
K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of APRIL – 2024							Dept.: CSE; Academic Year 2023 – 2024
Subject Code	:	23EE206	Subject:	Basic Electrical & Electronics Engineering			
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	A			Date: 6/04/2024

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 expression for equivalent resistance when two resistances R1 and R2 are connected in (i) Series (ii) Parallel	2 M	CO1	L2
(b)	Define Form Factor and Peak Factor.	2 M	CO1	L2
(c)	List the applications of diode.	2 M	CO1	L1
(d)	What is rectifier and classify it.	2 M	CO2	L2
(e)	Define Amplifier.	2 M	CO1	L1

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

Q. No	Question (s)	Marks	CO	BL
2.	State and Explain Kirchhoff's laws with suitable examples	10M	CO1	L2
	(OR)			
3.	determine the current i_1 and voltage across 6Ω resistor using Superposition theorem in the network shown below 	10M	CO1	L4
4.a	Define Average Value. Also derive the expression for Average value of Sinusoidal Voltage Wave form.	5M	CO2	L3
4.b	A resistance of 20Ω and an inductance of 0.2H are connected in series and are fed by a 230V, 50Hz, 1- phase, AC supply. Find (i) Inductance reactance (XL) (ii) impedance (Z) (iii) current supplied by the source (I) (iv) Active power drawn by the load (P).	5M	CO2	L4
	(OR)			
5.a	Define R.M.S. Value. Also derive an expression for RMS value of sine wave form?	5M	CO2	L3
5.b	Analyz the circuit with pure resistance when excited with a sinusoidal voltage source.	5M	CO2	L3
6.	Explain briefly about V-I characteristics of P-N junction Diode?	10M	CO2	L2
	(OR)			
7.	Draw the input and output characteristics of CE configuration & Explain in detail using circuit diagram?	10M	CO2	L3
8.	Explain in detail about block diagram description of a DC power supply?	10M	CO1	L2
	(OR)			
9.	With neat block diagram explain full wave bridge rectifier and it's working.	10M	CO2	L3

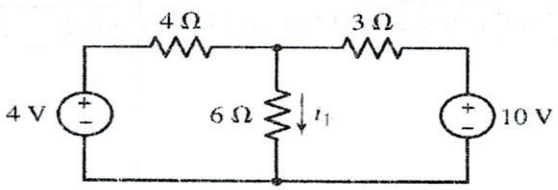
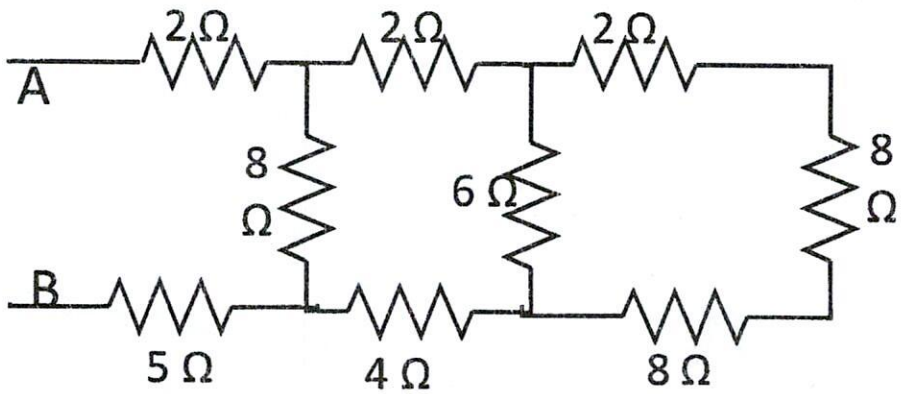
K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of APRIL – 2024							Dept.: CSE-B; Academic Year 2023 – 2024
Subject Code	:	23EE106	Subject:	Basic Electrical & Electronics Engineering			
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	B			Date:0 6/04/2024

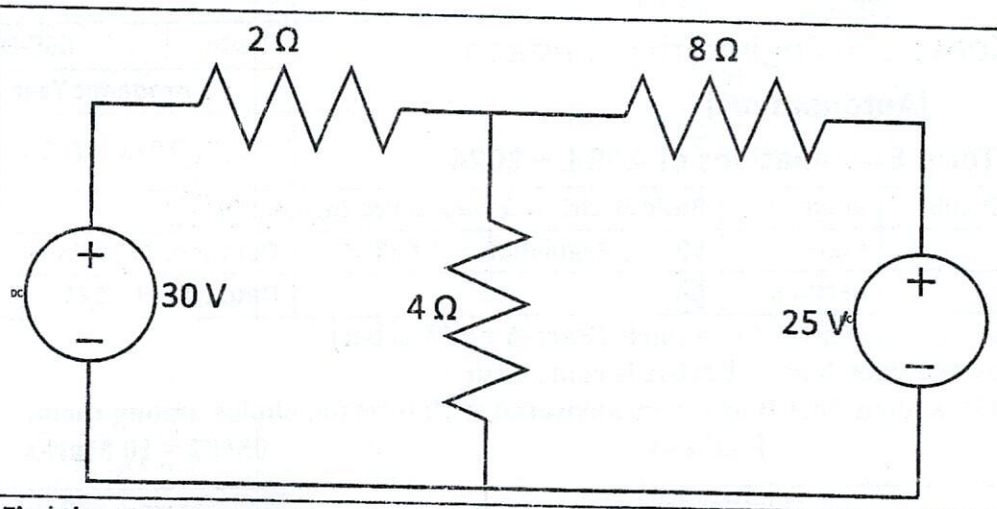
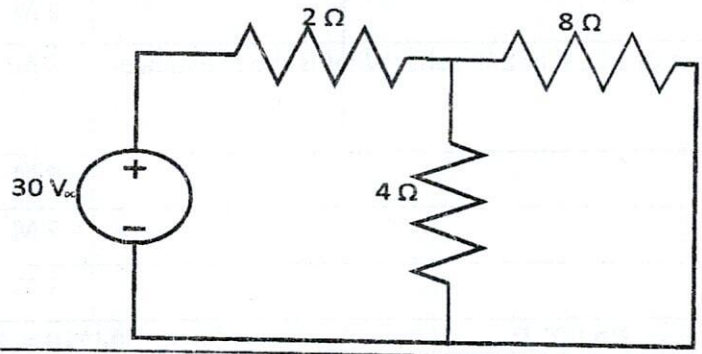
Note: 1. Question Paper consists of two parts (Part-A and Part-B)
2. Answering the questions in Part-A is compulsory
3. All Questions from Part B are to be answered with internal choice among them.

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

Q. No	Question (s)	Marks	CO	BL
1 (a)	Explain the ohm's law.	2 M	CO1	L2
(b)	An electric kettle takes a current of 12.5 A at 240 volts. What is the resistance of heating element.	2 M	CO1	L2
(c)	List the applications of diode.	2 M	CO1	L1
(d)	What is rectifier and classify it.	2 M	CO2	L2
(e)	Define Amplifier.	2 M	CO1	L1

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

Q. No	Question (s)	Marks	CO	BL
2.	State and Explain Kirchhoff's Laws.	10M	CO1	L2
	(OR)			
3.	Determine the current i_1 and voltage across 6Ω resistor using Superposition theorem in the network shown below. 	10M	CO1	L4
4.a	Define Average Value. Also derive the expression for Average value of Sinusoidal Voltage Wave form.	5M	CO2	L3
4.b	Determine the equivalent resistance between A&B to the following figure?. 	5M	CO2	L3
	(OR)			
5.a	Find the Currents in each branch using node analysis. PTO	5M	CO2	L3

				
5.b	**Find the currents and the voltages in the by using mesh analysis.** 	**5M**	**CO2**	**L3**
6.	**Explain briefly about V-I characteristics of P-N junction Diode?**	**10M**	**CO2**	**L2**
	(OR)			
7.	**Draw the input and output characteristics of CE configuration & Explain in detail using circuit diagram?**	**10M**	**CO2**	**L3**
8.	**Explain in detail about block diagram description of a DC power supply?**	**10M**	**CO1**	**L2**
	(OR)			
9.	**With neat block diagram explain full wave bridge rectifier and it's working.**	**10M**	**CO2**	**L3**

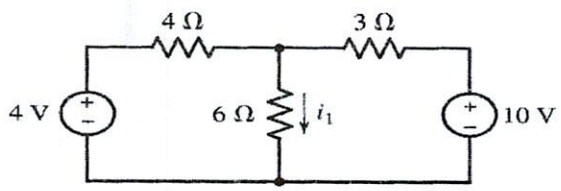
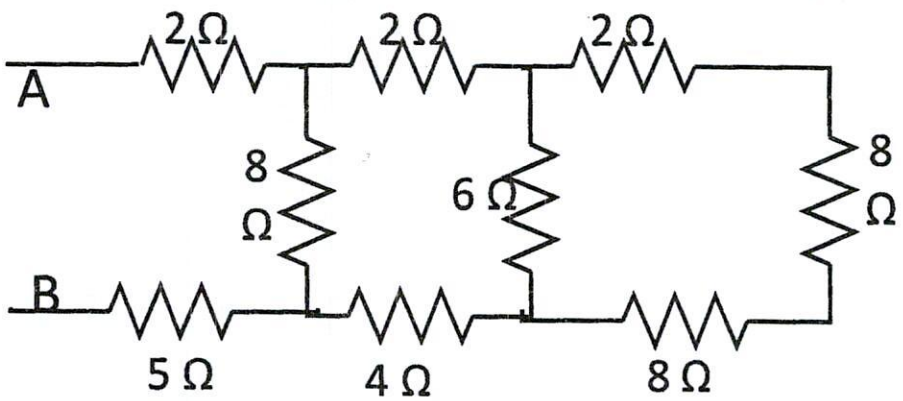
K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of APRIL – 2024							Dept.: CSE - C; Academic Year 2023 – 2024
Subject Code	:	23EE106	Subject:	Basic Electrical & Electronics Engineering			
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	C			Date:0 6/04/2024

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.

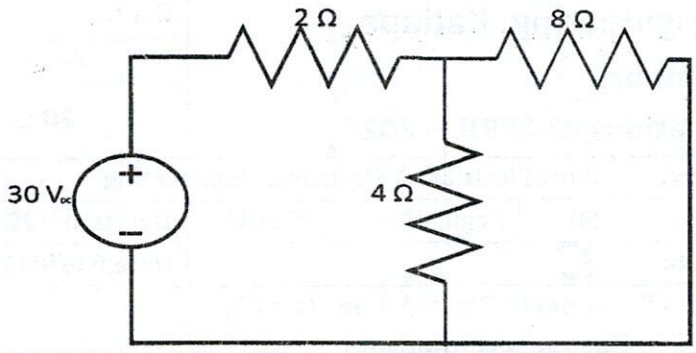
PART-A **05*02 = 10 Marks**

Q. No	Question (s)	Marks	CO	BL
1 (a)	Explain the ohm's law.	2 M	CO1	L2
(b)	Define Form Factor and Peak Factor.	2 M	CO1	L2
(c)	List the applications of diode.	2 M	CO1	L1
(d)	What is rectifier and classify it.	2 M	CO2	L2
(e)	Define Amplifier.	2 M	CO1	L1

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

Q. No	Question (s)	Marks	CO	BL
2.	State and Explain Kirchhoff's Laws.	10M	CO1	L2
	(OR)			
3.	Determine the current i_1 and voltage across 6Ω resistor using Superposition theorem in the network shown below. 	10M	CO1	L4
4.a	Define Average Value. Also derive the expression for Average value of Sinusoidal Voltage Wave form.	5M	CO2	L3
4.b	Determine the equivalent resistance between A&B to the following figure?. 	5M	CO2	L3
	(OR)			
5.a	Define R.M.S. Value. Also derive an expression for RMS value of sine wave form?	5M	CO2	L3
5.b	Find the currents and the voltages in the by using mesh analysis.	5M	CO2	L3

PTO

				
6.	Explain briefly about V-I characteristics of P-N junction Diode?	10M	CO2	L2
	(OR)			
7.	Draw the input and output characteristics of CE configuration & Explain in detail using circuit diagram?	10M	CO2	L3
8.	Explain in detail about block diagram description of a DC power supply?	10M	CO1	L2
	(OR)			
9.	With neat block diagram explain full wave bridge rectifier and it's working.	10M	CO2	L3

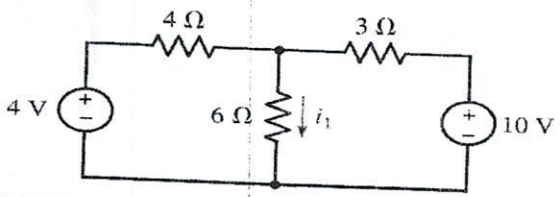
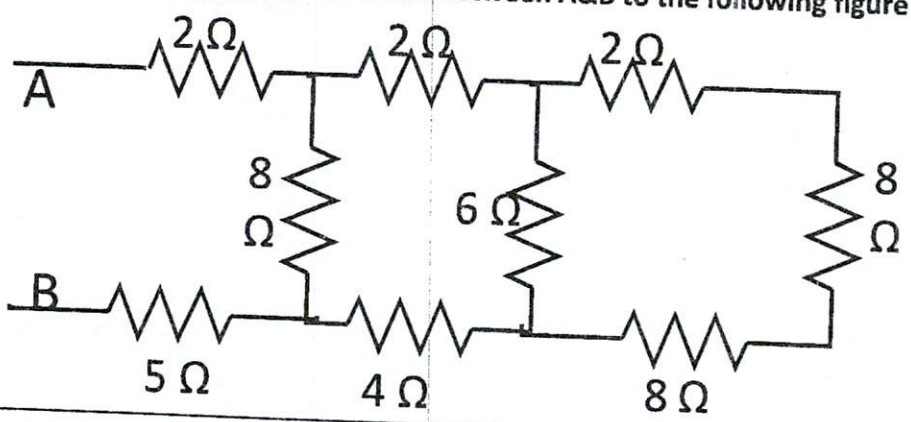
K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of APRIL – 2024							Dept.:	AI & ML
							Academic Year	2023 – 2024
Subject Code	:	23EE106	Subject:	Basic Electrical & Electronics Engineering				
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min	
Semester	:	II	Section:	-			Date:0 6/04/2024	

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.

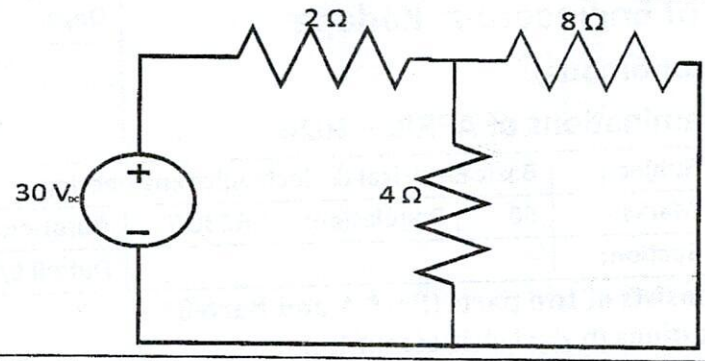
PART-A 05*02 = 10 Marks

Q. No	Question (s)	Marks	CO	BL
1 (a)	Explain the ohm's law.	2 M	CO1	L2
(b)	Define Form Factor and Peak Factor.	2 M	CO1	L2
(c)	List the applications of diode.	2 M	CO1	L1
(d)	What is rectifier and classify it.	2 M	CO2	L2
(e)	Define Amplifier.	2 M	CO1	L1

PART-B 04*10 = 40 Marks

Q. No	Question (s)	Marks	CO	BL
2.	State and Explain Kirchhoff's Laws.	10M	CO1	L2
	(OR)			
3.	Determine the current i_1 and voltage across 6Ω resistor using Superposition theorem in the network shown below. 	10M	CO1	L4
4.a	Define Average Value. Also derive the expression for Average value of Sinusoidal Voltage Wave form.	5M	CO2	L3
4.b	Determine the equivalent resistance between A&B to the following figure?. 	5M	CO2	L3
	(OR)			
5.a	Define R.M.S. Value. Also derive an expression for RMS value of sine wave form?	5M	CO2	L3
5.b	Find the currents and the voltages in the by using mesh analysis.	5M	CO2	L3

PTO

				
6.	Explain briefly about V-I characteristics of P-N junction Diode?	10M	CO2	L2
	(OR)			
7.	Draw the input and output characteristics of CE configuration & Explain in detail using circuit diagram?	10M	CO2	L3
8.	Explain in detail about block diagram description of a DC power supply?	10M	CO1	L2
	(OR)			
9.	With neat block diagram explain full wave bridge rectifier and it's working.	10M	CO2	L3

K.S.R.M. College of Engineering,(Autonomous)Kadapa B. Tech Mid Term Examinations of April – 2024							Dept.: M.E Academic Year 2023 – 2024
Subject Code	:	2303208	Subject :	Engineering Graphics			
Mid Term	:	I	Marks:	30	Regulation:	R23UG	Duration: 120 Min.
Semester	:	II	Section:	Common for CSE A, B, C & EEE,AIML			Date: 08/04/24 FN

Note: 1. All Questions Carry Equal Marks.

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	Construct a Hyperbola with the distance of the focus from the directrix as 50mm and eccentricity as 3/2. Also draw normal and tangent to the curve at a point 40 mm from the directrix.	10 M	CO1	L6
	(OR)			
2.	Construct a scale of 1:8 to show decimetres and centimetres and to read up to 1m. Show a length of 7.6 dm on it.	10M	CO1	L6
3.	Generate an Epicycloid of a circle of 40 mm diameter, which rolls on another circle of 120mm diameter for one revolution clockwise. Draw tangent to the curve at a point on it, 90 mm from the curve.	10M	CO1	L3
	(OR)			
4.	Draw the involute of a circle of 40mm diameter. Also draw a tangent and a normal to the curve at a point 90 mm from the centre of the circle.	10M	CO1	L2
5a.	Draw the projections of the following points, and find its quadrants. **A-** 25mm below H.P and 40mm infront of V.P **B-** 45mm below H.P and 20mm behind V.P **C-** 30mm above H.P and 25mm behind V.P **D-** 15mm above H.P and 35mm infront of V.P	5M	CO2	L2
5b.	A line AB of 50mm long and inclined at 45^0 to V.P and parallel to H.P. The line is 15 above H.P and one its end A is and 20 in front V.P. Draw the projections of the line.	5M		
	(OR)			
6	A line of AB of 100mm length is inclined at an angle of 30^0 to H.P and 45^0 to V.P.The point A is 15 above H.P and 20mm infront of V.P. Draw the projections of line.	10M	CO2	L2

K.S.R.M. College of Engineering, Kadapa (Autonomous) B. Tech Mid Term Examinations of April – 2024							Dept.: EEE, CSE(RA) Academic Year 2023 – 2024
Subject Code	:	23CM205	Subject:	BCME			
Mid Term	:	I	Marks:	50	Regulation:	R23UG	Duration: 120 Min
Semester	:	II	Section:	---			Date: 10-04-2024

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 the terms engineering & Civil Engineering ?	2 M	CO	L1
(b)	How do you define aggregate crushing and aggregate impact ?	2 M	CO	L1
(c)	What are the different materials used in the construction industry ?	2 M	CO	L1
(d)	Define smart material?	2 M	CO	L2
(e)	How do you define a metal?	2 M	CO	L1

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

Q. No	Question (s)	Marks	CO	BL
2.	Explain the different roles of civil engineers in society and describe the scope of transportation Engineering?	10M	CO	L2
	(OR)			
3.	What are the steps involved in building construction and building planning?	10M	CO	L1
4.	What is cement concrete, explain the different tests on cement concrete?	10M	CO	L1
	(OR)			
5.	Define surveying? What are the objectives and principles of surveying?	10M	CO	L1
6.	What is the role of Industries in Indian Economy?	10M	CO1	L1
	(OR)			
7.	Highlight the importance of Technology in (a) Automobile (b) Marine sector?	10M	CO1	L2
8.	Explain about the classification of non-ferrous metals?	10M	CO1	L2
	(OR)			
9.	What do you know about smart materials ?	10M	CO1	L2