LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(AUTONOMOUS)
L.B. Reddy Nagar :: Mylavaram-521 230 :: NTR Dist. :: A.P
Approved by AICTE, New Delhi. Affiliated to JNTUK, Kakinada

B.Tech. (I Semester) (R17) Semester End Examinations (Supplementary) - November 2025
(2018 & 2019 Regular admitted batches only)

TIME TABLE

R17

TIME :10.00 AM to 01.00 PM **A.Y. 2025-26**

DATE	24-11-2025 (Monday)	25-11-2025 (Tuesday)	26-11-2025 (Wednesday)	27-11-2025 (Thursday)	28-11-2025 (Friday)	29-11-2025 (Saturday)
ASE	17FE01 - Professional Communication-I	17FE04 - Differential Equations and Linear Algebra	17FE13 - Engineering Physics	17CI01 - Computer Programming	17ME01-Engineering Graphics	---
CE	17FE01 - Professional Communication - I	17FE04 - Differential Equations and Linear Algebra	17FE13 - Engineering Physics	17CI01 - Computer Programming	17CE01 - Building Materials and Construction	---
CSE	17FE01 - Professional Communication-I	17FE05 - Differential Equations and Numerical Applications	17FE15 - Engineering Chemistry	17CI01 - Computer Programming	17EC02 - Electronic Devices and Circuits	---
ECE	17FE01 - Professional Communication-I	17FE04 - Differential Equations and Linear Algebra	17FE15 - Engineering Chemistry	---	17EC02 -Electronic Devices and Circuits	17EC01 - Electrical Circuits and Networks
EEE	17FE01 - Professional Communication-I	17FE04 - Differential Equations and Linear Algebra	17FE12 - Applied Physics	17CI01 - Computer Programming	17ME50 - Basic Engineering Mechanics	---
EIE	17FE01 - Professional Communication-I	17FE04 - Differential Equations and Linear Algebra	17FE15 - Engineering Chemistry	17CI01 - Computer Programming	---	17EC01 - Electrical Circuits and Networks
IT	17FE01 - Professional Communication - I	17FE04 - Differential Equations and Linear Algebra	17FE15 - Engineering Chemistry	17CI01 - Computer Programming	17EC02 - Electronic Devices and Circuits	---
ME	17FE01 - Professional Communication-I	17FE04 - Differential Equations and Linear Algebra	17FE13 - Engineering Physics	17CI01 - Computer Programming	17ME01 - Engineering Graphics	---

Note: Any omissions or clashes in the time table may please be informed to the Controller of Examinations immediately.

Date: 01-11-2025 **CONTROLLER OF EXAMINATIONS** **PRINCIPAL**

Copy to: 1. Vice-Principal, Deans & HoDs 2. T&P cell, Transport in-charge & Librarian
3. Canteen, PD, Security & Hostels 4. Coordinator-Disciplinary 5. Notice Boards

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H.T.No										

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LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
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B.Tech. (I Semester) Supplementary Examinations

17FE04-DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA
(ASE,CE,ECE,EEE,EIE,IT&ME)

Time : 3 hours Max. Marks : 60

Answer one question from each unit
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Solve $(y\cos x+\sin y+y)dx+(\sin x+x\cos y+x)dy=0.$	6M	CO1	L3
(b)	A substance cools from $370K$ to $330K$ in10minutes, when the temperature of the surrounding air is $290K$, find the temperature of the substance after 40 minutes.	6M	CO1	L3
	(OR)			
2(a)	Investigate the integrating factor and hence find the general solution of $(1+xy)xdy+(1-xy)ydx=0.$	6M	CO1	L3
(b)	Find the orthogonal trajectories of family of curves $r=a(1-\cos\theta)$ where a is the parameter.	6M	CO1	L2
3(a)	Solve $(D^2-5D+6)y=4e^x+5.$	6M	CO2	L3
(b)	Find the general solution of the differential equation $(D^2+3D+2)y=\sin 3x.$	6M	CO2	L3
	(OR)			
4(a)	Solve $(D^2-2D)y-e^x\sin x=0$	6M	CO2	L3
(b)	Solve $(D^2+a^2)y=\tan ax,$ by the method of variation of parameters.	6M	CO2	L3
5(a)	Find the Maclaurin's series expansion of $e^x\sin y$ in the powers of x *and* y.	6M	CO3	L3
(b)	Generate a Partial differential equation by eliminating the arbitrary function from $f(x+y+z, x^2+y^2+z^2)=0.$	6M	CO3	L3
	(OR)			
6(a)	If $u=x+3y^2-z^3$, $v=4x^2yz$, $w=2z^2-xy$, *evaluate* $\frac{\partial(u,v,w)}{\partial(x,y,z)}$ *at* $(-1,1,0).$	6M	CO3	L3
(b)	Solve $(y^2+z^2)p-xyq+zx=0$	6M	CO3	L3
7(a)	Reduce the matrix A = $\begin{bmatrix}-2&-1&-3&-1\\1&2&3&-1\\1&0&1&1\\0&1&1&-1\end{bmatrix}$ to Echelon form and find its rank.	6M	CO4	L3

(b)	Test if the system of equations x - 2y + 3t = 2, 2x + y + z + t = - 4, 4x - 3y + z +7t = 8 are consistent. If so, solve them completely.	6M	CO4	L3
	(OR)			
8(a)	Find the rank of the matrix $\begin{bmatrix} 4 & 3 & 2 & 1 \\ 5 & 1 & -1 & 2 \\ 0 & 1 & 2 & 3 \\ 1 & -1 & 3 & -2 \end{bmatrix}$ by reducing it to normal form.	6M	CO4	L3
(b)	Solve the system of equations $2x - y + 3z = 0, 3x + 2y + z = 0$ and $x - 4y + 5z = 0$.	6M	CO4	L3
9(a)	Find the eigen values and eigen vectors of the matrix $A = \begin{bmatrix} 1 & 1 & 3 \\ 1 & 5 & 1 \\ 3 & 1 & 1 \end{bmatrix}$	8M	CO5	L3
(b)	Prove that the eigen values of a diagonal matrix are just its diagonal elements.	4M	CO5	L2
	(OR)			
10(a)	Evaluate the eigen values and the corresponding eigen vectors of $\begin{bmatrix} 1 & 1 & 3 \\ 1 & 5 & 1 \\ 3 & 1 & 1 \end{bmatrix}$	8M	CO5	L3
(b)	If λ is eigen value of a square matrix A of order 'n' then show that λ^n is the eigen values of the matrix A^m.	4M	CO5	L2

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B.Tech. (I Semester) Supplementary Examinations

17FE13-ENGINEERING PHYSICS
(ASE,CE&ME)

Time : 3 hours Max. Marks : 60

Answer one question from each unit
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Explain with neat sketch how the interference is formed in thin films by refraction and also give the necessary theory.	6M	CO1	L2
(b)	A soap film with a refractive index of 1.33 and thickness of 5000 A^0 is exposed to white light. What wavelengths in the visible region are reflected?	6M	CO1	L2
	(OR)			
2(a)	Discuss the Fraunhoffer diffraction at a single slit.	6M	CO1	L2
(b)	The first diffraction minima due to a single slit diffraction is at 30^0 for a light of wavelength 5000 A^0. Find the width of the slit.	6M	CO1	L3
3(a)	Illustrate the construction and working of Nd-YAG laaser.	8M	CO2	L3
(b)	Write any four Nd-YAG applications	4M	CO2	L1
	(OR)			
4(a)	Outline the applications of Lasers.	6M	CO2	L1
(b)	Explain the working principle of laser.	6M	CO2	L2
5(a)	Derive the expression for conductivity of the metal in terms of mobility of the electrons.	8M	CO3	L2
(b)	Explain the physical significance of the wave function.	4M	CO3	L2
	(OR)			
6(a)	Calculate the ratio $\mathbf{d_{100}:d_{110}:d_{111}}$ for simple cubic structure.	6M	CO3	L3
(b)	Deduce the expression for the inter-planar distance in terms of Miller indices for a cubic structure.	6M	CO3	L3
7(a)	Explain the classification of magnetic materials.	8M	CO4	L2
(b)	Define the terms (i) Rententivity (ii) Coercivity.	4M	CO4	L1
	(OR)			
8(a)	What is Curie-Weiss law?	4M	CO4	L1
(b)	Draw and explain B-H curve for a ferromagnetic material placed in a magnetic field.	8M	CO4	L2
9(a)	What are super conductors?	4M	CO5	L1
(b)	Explain the Meissner effect. How is it used to classify the superconductors?	8M	CO5	L2
	(OR)			
10(a)	Explain the critical parameters and their significance in superconductivity.	6M	CO5	L2
(b)	Discuss the important experimental facts of superconductivity.	6M	CO5	L2

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B.Tech. (I Semester) Supplementary Examinations

17FE12-APPLIED PHYSICS

(EEE)

Time : 3 hours | Max. Marks : 60

Answer one question from each unit
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	What are the conditions to obtain sustained interference?	4M	CO1	L1
(b)	Write the condition for bright and dark fringes in thin films due to reflection.	8M	CO1	L1
	(OR)			
2(a)	What is a plane transmission grating? How is it obtained?	4M	CO1	L1
(b)	Explain Fraunhoffer diffraction due to N Slits.	8M	CO1	L3
3(a)	Differentiate between unpolarized and polarized light.	6M	CO2	L2
(b)	State and explain Brewster's law. Prove that the reflected refracted light rays are perpendicular to each other.	6M	CO2	L2
	(OR)			
4(a)	Illustrate construction and working of a Helium-Neon gas laser.	8M	CO2	L3
(b)	Differentiate between spontaneous and stimulated emission of radiations.	4M	CO2	L2
5(a)	Describe de-Broglie hypothesis of matter waves.	8M	CO3	L2
(b)	Summarize the properties of matter waves.	4M	CO3	L2
	(OR)			
6(a)	Discuss the variation of Fermi-Dirac distribution function with temperature for electrons in a metal.	6M	CO3	L2
(b)	Summarize the assumptions of classical free electron theory.	6M	CO3	L2
7(a)	Describe a Solar Cell and write the V- I characteristics of a solar cell.	8M	CO4	L2
(b)	Write the applications of Solar Cell.	4M	CO4	L1
	(OR)			
8(a)	Write a short note on Intrinsic Semiconductors.	6M	CO4	L1
(b)	Differentiate P Type and N Type semiconductors.	6M	CO4	L1
9(a)	Deduce the Clasius-Mossotti relation.	6M	CO5	L3
(b)	The polarizability of Neon gas is 0.35×10^{-40} F m^2 If the gas contains 2.7×10^{25} atoms/m^3 at 0 ^{0}c and 1 atmospheric pressure. Find its relative dielectric constant.	6M	CO5	L1
	(OR)			
10(a)	Define ionic polarization.	4M	CO5	L2
(b)	Derive an expression for ionic polarizability.	8M	CO5	L3

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B.Tech. (I Semester) Supplementary Examinations

17CI01-COMPUTER PROGRAMMING

(Common to All)

Time : 3 hours | Max. Marks : 60

Answer one question from each unit
All questions carry equal marks

Q.No.	Question	Marks
1(a)	Outline the structure of a C program and explain.	6M
(b)	Write a C program to print multiplication table for the given number.	6M
	(OR)	
2(a)	Write a C program to print the n terms in a Fibonacci series.	6M
(b)	Design an algorithm to find the grade of a student, based on average marks of 3 subjects. Translate it into source code.	6M
3(a)	Construct a C program to sort the elements of an integer array.	6M
(b)	List out some important operations performed on arrays.	6M
	(OR)	
4(a)	Define searching. Explain any searching procedure with a suitable example.	6M
(b)	Write a C program to generate 2x2 Identity Matrix.	6M
5.	Categorize various types of function definitions with examples.	12M
	(OR)	
6(a)	List out some pre-defined functions available in C.	6M
(b)	Write a C program to swap two numbers using functions that use pass by reference method for parameters.	6M
7(a)	Why structure is called heterogeneous data type? What are the valid data types for the fields of a structure?	6M
(b)	How to compare structure variables? Give an example.	6M
	(OR)	
8(a)	How are user defined data types defined? Illustrate with suitable examples.	6M
(b)	What is the use of typedef keyword? How is this used in structures? Give example declarations.	6M
9(a)	How do you use error handling functions in files? Illustrate with an example.	6M
(b)	Write a C program to append data to the existing text file.	6M
	(OR)	
10(a)	State and explain standard streams in C.	6M
(b)	Write procedure to create a file in C Program.	6M

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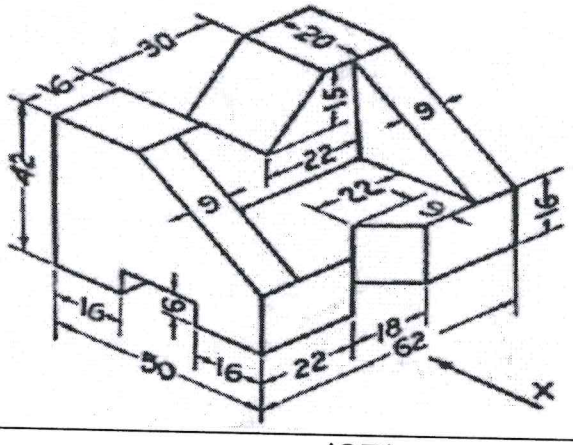
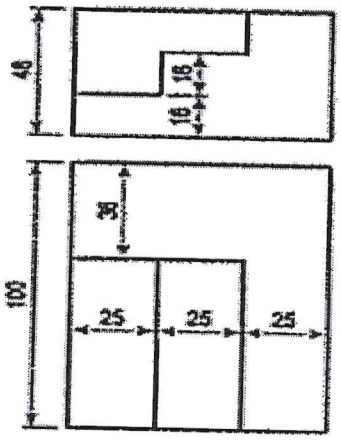
B.Tech. (I Semester) Supplementary Examinations

17ME01-ENGINEERING GRAPHICS
(ASE&ME)

Time : 3 hours Max. Marks : 60

Answer one question from each unit
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Construct an ellipse with major axis equal to 120 mm and minor axis is equal to 80 mm, through arc of circle method.	6M	CO1	L2
(b)	Construct a hyperbola, when the distance of the focus from the directrix is 65 mm and eccentricity is 3/2.	6M	CO1	L2
	(OR)			
2(a)	Draw a hypocycloid of a circle of 4 cm diameter which rolls inside another circle of 20 cm diameter for one revolution	8M	CO1	L2
(b)	Also draw a tangent and normal to the same curve at a point 9 cm from the centre of the base circle.	4M	CO1	L2
3(a)	A point A is 35 mm above the HP and 25 mm in front of the VP. Draw its projections. B, 40 mm above the H.P. and 25 mm in front of the V.P. C, in the V.P. and 40 mm above the H.P.	4M	CO2	L2
(b)	The top view of 75 mm long line AB measures 65 mm, while the length of its front view is 50 mm. Its one end is A is in the HP and 12 mm in front of the VP. Draw the projections of AB and determine its inclinations with HP and the VP	8M	CO2	L3
	(OR)			
4(a)	Draw the projections of the following points. (i)A is 35 mm above HP and 45 mm infront of VP (ii)B is 25 mm below HP and 35 mm behind VP	4M	CO2	L2
(b)	The front view of a line AB 80 mm long measures 55 mm while its top view measures 70 mm. End A is in both HP and VP. Draw the projections of the line and find its inclinations with the reference planes.	8M	CO2	L2
5(a)	A square ABCD of 40 mm side has a corner on the H.P. and 20 mm in front of the V.P. All the sides of the square are equally inclined to the H.P. and parallel to the V.P. Draw its projections.	6M	CO3	L2
(b)	A regular pentagon of 25 mm side has one side on the ground. Its plane is inclined at 45° to the H.P and perpendicular to the V.P Draw its projections and show its traces.	6M	CO3	L2
	(OR)			

6.	Draw the projections of a circle of 50 mm diameter having a point on the circumference of the circle in H.P, such that its surface makes an angle of $40^0$with H.P. and the top view of the diameter passing through that point makes an angle of $30^0$with V.P. Draw the projections.	12M	CO3	L3
7.	Draw the projections of a cube of 25 mm long edges resting on the H.P on one of its corners with a solid diagonal perpendicular to the V.P. Assume the cube to be resting on one of its faces on the H.P. with a solid diagonal parallel to the V.P	12M	CO4	L3
	(OR)			
8.	A rectangular prism of base 40 mm x 30 mm and height 70mm rests with is longer edge of the base on the VP. If the axis of the prism is inclined to VP at $30^0$and the front view of the axis is inclined to the xy line at 45^0, draw the top and front views.	12M	CO4	L3
9.	Draw the following figure. All dimensions are in mm. i) front view ii) top view iii) side view 	12M	CO5	L4
	(OR)			
10.	The orthographic projections of the object is shown in figure below. Draw the isometric view of the object 	12M	CO5	L4

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B.Tech. (I Semester) Supplementary Examinations

17EC02-ELECTRONIC DEVICES AND CIRCUITS

(CSE,ECE&IT)

Time : 3 hours | Max. Marks : 60

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	What is Fermi level, Identify the Fermi level position in intrinsic type semiconductors using energy band diagram.	6M	CO1	L2
(b)	Identify the Fermi level position in N-type and P-type semiconductors using energy band diagrams.	6M	CO1	L2
	(OR)			
2(a)	Explain the conduction of current in Intrinsic and Extrinsic semiconductors.	6M	CO1	L2
(b)	Classify materials based on Energy band Diagrams and explain.	6M	CO1	L4
3(a)	Summarize the applications of Zener diode and LED.	6M	CO2	L2
(b)	Using V-I characteristics of p-n junction diode, summarize the region of operations.	6M	CO2	L3
	(OR)			
4(a)	Explain the Open circuited PN Junction Diode.	6M	CO2	L2
(b)	Explain the operation Varactor diode and Mention its application.	6M	CO4	L2
5(a)	Determine the value of Inductance required to use in Full wave rectifier at operating frequency of 50 HZ, if the ripple factor is 10% for Load résistance of 500 Ω.	6M	CO4	L3
(b)	Obtain the ripple factor of a full wave rectifier using L filter.	6M	CO2	L2
	(OR)			
6(a)	List out the advantages of bridge rectifier circuit.	6M	CO4	L1
(b)	Illustrate the operation of full wave rectifier with capacitor filter and derive the expression for the ripple factor using capacitor filter.	6M	CO4	L3
7(a)	Identify the differences between BJT and FET.	6M	CO4	L2
(b)	Describe the classifications of FET and sketch the symbols of various FETs.	6M	CO4	L4
	(OR)			
8(a)	Summarize the operation of transistor using common Base configuration with its input and output characteristics.	6M	CO2	L2
(b)	Recall the symbols of NPN transistor, PNP transistor, n channel JFET, p channel JFET, Enhancement mode n channel MOSFET and Depletion mode n channel MOSFET.	6M	CO3	L1
9(a)	Draw the circuit of Self bias and derive the expression for stability factor S.	6M	CO2	L2
(b)	Discuss Sensistor compensation technique for stable operation of BJT.	6M	CO4	L2
	(OR)			
10(a)	Define biasing and explain the need of biasing.	6M	CO5	L3
(b)	Define stability factors S, S^I and S^{II}.	6M	CO5	L3

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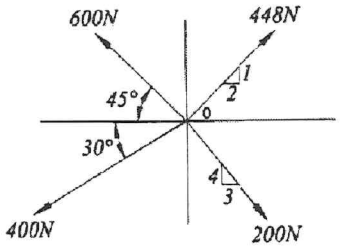
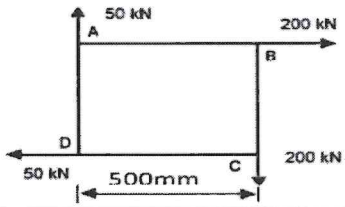
B.Tech. (I Semester) Supplementary Examinations

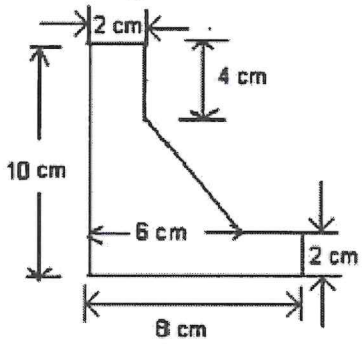
17ME50-BASIC ENGINEERING MECHANICS

(EEE)

Time : 3 hours | Max. Marks : 60

Answer one question from each unit
All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	Explain the following terms. (i) Rigid body (ii) Dynamics (iii) Couple.	6M	CO1	L1
(b)	Evaluate the resultant force of given system of forces as shown in figure. 	6M	CO1	L3
	(OR)			
2(a)	State the following (i) Newton's law of gravitation (ii) Parallelogram law of forces (iii) Varignon's theorem.	6M	CO1	L1
(b)	On a square ABCD of size 500mm, forces are acting along the sides in clockwise direction as shown in figure. The force on AB is 200KN, BC is 200KN, CD is 50KN and DA is 50KN. Determine the magnitude, direction and position of the resultant force. 	6M	CO1	L3
3(a)	What is meant by friction and list the factors influencing on friction.	6M	CO2	L4
(b)	A body is weighing 300N rests on a rough horizontal plane is subjected to a horizontal force 'P'. Determine the frictional force developed in the surface if coefficient of friction is 0.25 and if 'P' is applied at an angle of 30^0 with horizontal.	6M	CO2	L2
	(OR)			
4(a)	A body is weighing 500N rests on a rough horizontal plane is subjected to a horizontal force P. Determine the frictional force developed in the surface if coefficient of friction is 0.3 and if P is applied at an angle of 20^0 with horizontal.	6M	CO2	L3
(b)	Define friction and write laws of friction.	6M	CO2	L2

5(a)	State and explain parallel axis theorem.	6M	CO3	L3
(b)	Determine the moment of inertia of a circular area about the centroidal axes.	6M	CO3	L2
	(OR)			
6(a)	Locate the centroid of the figure shown below:  	6M	CO3	L3
(b)	Define Centriod, Centre of gravity, and moment of inertia.	6M	CO3	L2
7.	Derive the expression for the mass moment of inertia of a solid sphere of radius R about its diametral axes.	12M	CO4	L2
	(OR)			
8(a)	Differentiate the following (i) Centroid and center of gravity. (ii) Area moment of inertia and mass moment of inertia	6M	CO4	L2
(b)	A hemisphere of diameter 300mm is symmetrically placed on the top base of a cylinder of diameter 200mm and height 300mm. Locate the centre of gravity of the composite volume.	6M	CO4	L3
9(a)	A ball is thrown vertically upwards with a speed of 15 m/s. Estimate the time required to reach maximum height and to reach its original position.	6M	CO5	L3
(b)	A car starts from rest and with constant acceleration achieves a velocity of 15m/s when it travels a distance of 200m. Determine the acceleration of the car and the time required.	6M	CO5	L3
	(OR)			
10(a)	Draw the motion curves of a particle in rectilinear motion.	6M	CO5	L3
(b)	A stone is dropped from the top of the tower 50 m high. At the same time another stone is thrown up from the foot of the tower with a velocity of 25 m/s. At what distance from the top and after how much time the two stones cross each other?	6M	CO5	L2

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B.Tech. (I Semester) Supplementary Examinations

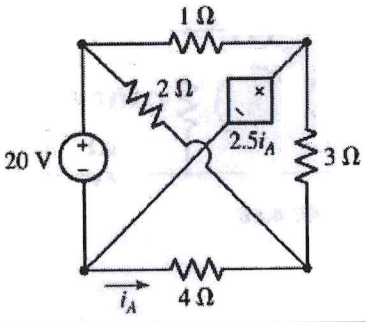
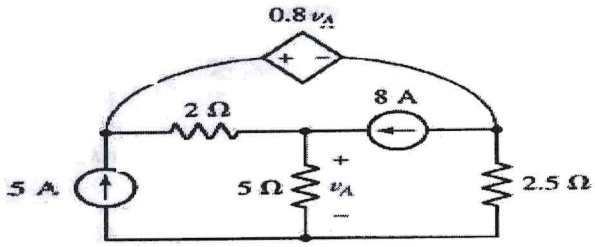
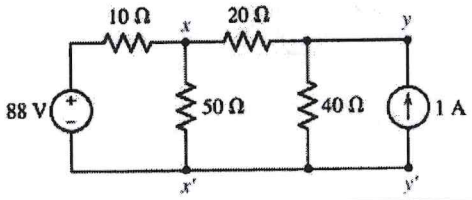
17EC01-ELECTRICAL CIRCUITS AND NETWORKS

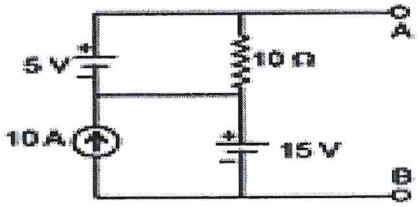
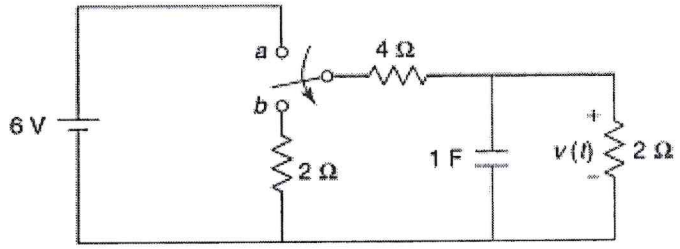
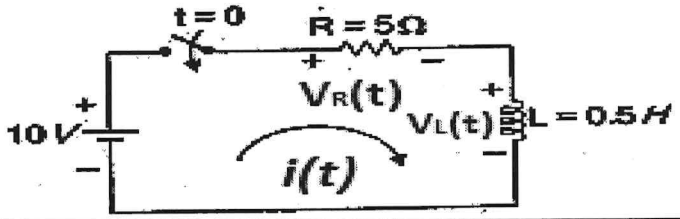
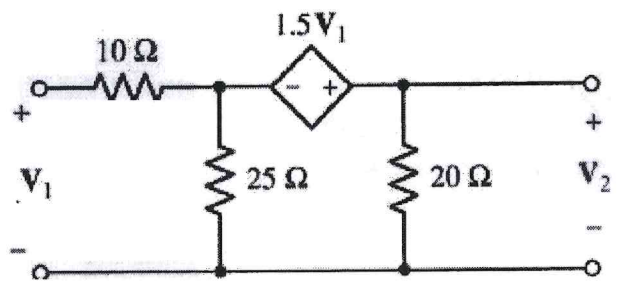
(ECE&EIE)

Time : 3 hours | Max. Marks : 60

Answer one question from each unit

All questions carry equal marks

Q.No	Questions	Marks	CO	BL
1(a)	State and explain KVL and KCL with example.	6M	CO1	L2
(b)	Find i_A in the circuit. 	6M	CO1	L3
	(OR)			
2(a)	Classify elements of electrical network and explain in brief.	6M	CO1	L2
(b)	Find (i) v_A (ii) the power dissipated in the 2.5 ohm resistor. 	6M	CO1	L3
3(a)	Illustrate the concepts of self-inductance and mutual inductance of magnetic circuits.	6M	CO1	L3
(b)	Explain about cumulative coupling and differential coupling in series induction.	6M	CO1	L2
	(OR)			
4(a)	Explain self inductance and mutual inductance of magnetic circuits.	6M	CO1	L1
(b)	Summarize the concept of coupled circuit and draw electrical equivalent circuits.	6M	CO1	L2
5(a)	State and explain Superposition theorem with example.	6M	CO3	L3
(b)	Find the Norton's equivalent circuit as vied from terminals x and x' 	6M	CO3	L2
	(OR)			

6(a)	Design a series RLC circuit that will resonate at 10kHz, have a bandwidth of 1kHz and draw $15.3W$ power from a 200V generator operating at the resonant frequency of the current.	6M	CO4	L3
(b)	Determine the voltage across the terminals AB in the circuit shown in Figure, using Superposition theorem. 	6M	CO3	L2
7(a)	Describe initial conditions of resistor, inductor and capacitor of a transient electrical circuit.	6M	CO4	L1
(b)	Find thevoltage response v(t),if the switch is moved from the position a to b at t=0 as shown below. 	6M	CO4	L3
	(OR)			
8(a)	Evaluate i(t) and sketch its response of the circuit shown in figure, the switch is kept open for a long time. The switch is closed at t=0. 	6M	CO4	L2
(b)	Estimate the transient response of series RC circuit having Sinusoidal excitation.	6M	CO4	L1
9.	The h-parameters of a certain two-port network are h_{11}=2ohms, h_{12}=4, h_{21}= -4, h_{22}=2 mhos. Find (i) Z-parameters (ii) Y-parameters (iii) ABCD parameters.	12M	CO5	L2
	(OR)			
10(a)	Obtain h parameters in terms of Y parameters.	6M	CO5	L2
(b)	Find [t] for the two port shown in figure. 	6M	CO5	L3

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