<table>
<tr><td colspan="6" align="right">Course Code: B23HS1101</td></tr>
<tr><td colspan="5" align="center">SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)</td><td>R23</td></tr>
<tr><td colspan="6" align="center">I B.Tech. I Semester MODEL QUESTION PAPER</td></tr>
<tr><td colspan="6" align="center">COMMUNICATIVE ENGLISH</td></tr>
<tr><td colspan="6" align="center">Common to all Programmes of Engineering</td></tr>
<tr><td colspan="3">Time: 3 Hrs.</td><td colspan="3" align="right">Max. Marks: 70 M</td></tr>
<tr><td colspan="6" align="center">Answer Question No.1 compulsorily</td></tr>
<tr><td colspan="6" align="center">Answer ONE Question from EACH UNIT</td></tr>
<tr><td colspan="6" align="center">Assume suitable data if necessary</td></tr>
<tr><td colspan="6" align="right">10 x 2 = 20 Marks</td></tr>
<tr><td></td><td></td><td></td><td>CO</td><td>KL</td><td>M</td></tr>
<tr><td>1.</td><td>a).</td><td>Construct any four expressions used for invitations.</td><td>1</td><td>3</td><td>2</td></tr>
<tr><td></td><td>b).</td><td>Build a short conversation on “Importance of learning a foreign language”.</td><td>1</td><td>3</td><td>2</td></tr>
<tr><td></td><td>c).</td><td>Choose the suitable transition/discourse markers:
i. ……………….. I fired at the leopard; he shook my arm.
a) as b) since c) because d) for
ii. The flood victims are short of food. ……………….. they urgently need medical supplies.
a) Similarly b) In addition c) Any how d) For instance</td><td>2</td><td>3</td><td>2</td></tr>
<tr><td></td><td>d).</td><td>Construct a sentence for each of the following words.
i. Flutter ii. Obsolete</td><td>2</td><td>3</td><td>2</td></tr>
<tr><td></td><td>e).</td><td>Choose the appropriate articles to fill-in the blanks:
i. Srikanth is planning to go to ………… United States of America.
ii. John built ………… yard for his cattle.</td><td>3</td><td>3</td><td>2</td></tr>
<tr><td></td><td>f).</td><td>Construct the sentences with appropriate prepositions:
i. Shivaji Maharaj fought ………… every kind of aggression.
ii. How did these things come …………?</td><td>3</td><td>3</td><td>2</td></tr>
<tr><td></td><td>g).</td><td>Construct the following chunks into meaningful sentences.
i. The platform is on the train.
ii. To college walk I every day.</td><td>4</td><td>3</td><td>2</td></tr>
<tr><td></td><td>h).</td><td>Organize the given sentences into a meaningful paragraph:
i. The foundation stone was laid in 1972.
ii. As a result, the city suffered from horrendous traffic congestion.
iii. It was going to be the first in South Asia.
iv. They plied in the center of the road.
v. To ease traffic in the city, it was decided that an underground railway line would be built.
vi. Calcutta, unlike other cities, keeps its trams.</td><td>4</td><td>3</td><td>2</td></tr>
</table>

	i).	Construct a short note (50 words) on Scanning technique.	**5**	**3**	**2**
	j).	Develop four relevant sentences for the following pictorial representation.  	**5**	**3**	**2**
					5 x 10 = 50 Marks
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Identify the different ways in which O. Henry tells his readers about the financial situation of the couple "Mr Jim and Mrs Della".	**1**	**3**	**5**
	b).	**Develop a conversation for the following context.** Sasi introduces her friend A K Narayana, who has been admitted to the first year B. Tech Class, to her English Professor Dr. Rajeev Prakasam.	**1**	**3**	**5**
		OR			
3.	**a).**	Develop the theme "Self-help is the best help" through a story of your own.	**1**	**3**	**5**
	b).	**Make use of appropriate expressions to fill in the blanks.** Teacher - Students. I hope everyone has completed the History homework I gave yesterday. Raj – Good Morning, Ma'am__________ Teacher – Raj, what happened? Why ______ completed your homework? Raj – ________ Ma'am; I had a severe headache yesterday. Teacher – Well, _______ for today. Try to take your friend's help and complete it by the end of day, _______ by tomorrow morning. Raj – Okay Ma'am, ________complete the homework by recess. Teacher –_________ repeat this, Raj. All these will count for your internal marks. And I _________ that you are a hard worker. Raj – _________, Ma'am. I ________. Thank you so much for	**1**	**3**	**5**

		understanding.			
		UNIT-2			
4.	**a).**	Construct an essay on the lines ‘*For men may come and men may go, / But I go on forever’* in the poem ‘The Brook’.	**2**	**3**	**5**
	b).	Make a list of any five Cohesive Devices and use them in your own sentences.	**2**	**3**	**5**
		OR			
5.	**a).**	**Construct a Paragraph on any one of the following in 100 words**. i.“Practice makes man perfect”. ii.NEP-2020	**2**	**3**	**5**
	b).	Distinguish the following pairs and use them in sentences. i.aisle/isle ii. Four/fore iii.paws/pause iv. Sell/cell v. reign/rain	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	Examine the life of Elon Musk to prove that he is a visionary leader of cutting-edge technology. Discuss with relevant examples.	**3**	**4**	**5**
	b).	**Examine the errors and construct correct counterparts.** i. Many peoples attended the funeral of the great man. ii. The shepherd took the cattles to the field. iii. Sita could not understands what the teacher was saying. iv. Do you know the importance for clean water? v. Laugh is the best medicines.	**3**	**4**	**5**
		OR			
7.	**a).**	**Assume appropriate verb forms to fill in the following blanks.** i. Were you ………. (pay) attention to what was being said? ii. Raman ……….. (live) in Chennai for 10 years. iii. Suraj ……..... (love) going to the parties with his friends. iv. Neither of my brothers ………….. (have) any children. v. Nobody …………. (be) allowed to drive unless they are eighteen.	**3**	**4**	**5**
	b).	**Examine the errors and construct correct counterparts.** i. You can take Visakha Express to Mumbai. ii. There are a pair of trousers. iii. The committee has voted as per their choice. iv. The clothes were neatly hanged on the cloth line. v. The film show began when we arrived in the hall.	**3**	**4**	**5**
		UNIT-4			
8.	**a).**	Infer the way by which the children found it exciting to play with their	**4**	**4**	**5**

		new non-violent toys.			
	b).	Analyse your requirement of transfer certificate as undergraduate for applying for a postgraduate course in a letter to your Principal.	**4**	**4**	**5**
		OR			
9.	**a).**	Assume relevant credentials and build a CV for the following position mentioned. You are a fresh graduate in Computer Science Engineering from the National Institute of Technology, Trichy. You found an advertisement in the Hindu that Infosys hires Web Developers.	**4**	**4**	**5**
	b).	As a recent buyer of the car, assume relevant information and draft an E-mail to the Manager of XYZ automotive company, Mr. Kishore, regarding the poor quality of service facility available in the city. Sign the E-mail as Anil.	**4**	**4**	**5**
		UNIT-5			
10.	**a).**	Analyze the ways in which you can incorporate intrapersonal communication in your own life.	**5**	**4**	**5**
	b).	**Analyze the following passage carefully and write an answer to the questions given in the following.** Caffeine, the stimulant in coffee, has been called “the most widely used psychoactive substance on Earth”. Synder, Daly and Bruns have recently proposed that caffeine affects behavior by countering the activity in the human brain of a naturally occurring chemical called adenosine. Adenosine normally depresses neuron firing in many areas of the brain. It apparently does this by inhibiting the release of neurotransmitters, chemicals that carry nerve impulses from one neuron to the next. Like many other agents that affect neuron firing, adenosine must first bind to specific receptors on neuronal membranes. There are at least two classes of these receptors, which have been designated A1 and A2.Snyder et al propose that caffeine, which is structurally similar to adenosine, is able to bind to both types of receptors, which prevents adenosine from attaching there and allows the neurons to fire more readily than they otherwise would. 1. What is known as the most widely used psychoactive substance on Earth? 2. How does caffeine affect one’s behaviour? 3. What are Neurotransmitters? 4. Write synonyms for stimulant. 5. Find a suitable word to replace the highlighted word – “Adenosine normally **depresses** neuron firing in many areas of the brain.	**5**	**4**	**5**

		OR			
11.	**a).**	Analyze and develop an essay on "Artificial Intelligence influence on Human thought".	**5**	**4**	**5**
	b).	**Simplify (Précis) the following paragraph.** "Women entrepreneurs in the developing world often face challenges that limit their chances for success and growth. They often have less access to education than men and have difficulty getting financing on their own. But with an understanding of the essential aspects of doing business – such as planning, financing, networking and marketing – they can overcome those obstacles. That's where the 10,000 Women Initiative comes in. As Faiza Elmasry tells us, it's an investment in education with dividends that benefit the businesswomen, their local communities, and their national economies." (Goldman Sachs invests in Educating Women in Business, Voice of America, voanews.com)	**5**	**4**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code: B23BS1101
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		I B.Tech. I Semester MODEL QUESTION PAPER			
		LINEAR ALGEBRA AND CALCULUS			
		Common to all Programmes of Engineering			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20Marks
			CO	**KL**	**M**
1.	**(a)**	State Cauchy-Binet formula.	**1**	**1**	**2**
	(b)	Discuss the conditions for testing the consistency of a system of non-homogeneous linear equations.	**1**	**2**	**2**
	(c)	State Cayley-Hamilton theorem.	**2**	**1**	**2**
	(d)	Find the index and signature of the quadratic form $x^2+2y^2-3z^2$	**2**	**3**	**2**
	(e)	State Lagrange's Mean-Value theorem	**3**	**1**	**2**
	(f)	Verify Cauchy Mean-Value theorem for $f(x) = e^x$ in (a, b)	**3**	**3**	**2**
	(g)	Explain Leibnitz's rule for differentiation under integral sign	**4**	**2**	**2**
	(h)	Find $\frac{du}{dt}$, if $u = y^2 - 4ax,\ x = at^2,\ y = 2at$	**4**	**3**	**2**
	(i)	Express $\iiint_R f(x,y,z)\,dx\,dy\,dz$ in spherical polar co-ordinates	**5**	**2**	**2**
	(j)	Evaluate $\int_0^2\int_0^4 (x^2+y^2)dxdy$	**5**	**3**	**2**
					5 x 10 = 50 Marks
		UNIT-1			
2.	**(a)**	Determine the rank of the matrix $\begin{pmatrix} 2 & 3 & -1 & -1 \\ 1 & -1 & -2 & -4 \\ 3 & 1 & 3 & -2 \\ 6 & 3 & 0 & -7 \end{pmatrix}$.	**1**	**3**	**5**
	(b)	Find whether the following equations are consistent. If so, solve them $x+y+2z = 4,\ 2x-y+3z = 9,\ 3x-y-z = 2$	**1**	**3**	**5**
		OR			

3.	**(a)**	Using Gauss-Jordan method, find the inverse of the matrix $\begin{pmatrix} 3 & 1 & 1 \\ 2 & 2 & 1 \\ 1 & 4 & 5 \end{pmatrix}$	**1**	**3**	**5**
	(b)	Solve the equations $20x + y - 2z = 17,\ 3x + 20y - z = -18$ and $2x - 3y + 20z = 25$ by Gauss-Seidel iteration method.	**1**	**3**	**5**
		UNIT-2			
4.	**(a)**	Find the characteristic equation of the matrix $A = \begin{pmatrix} 2 & 1 & 1 \\ 0 & 1 & 0 \\ 1 & 1 & 2 \end{pmatrix}$ and hence compute A^{-1}. Also find the matrix represented by $A^8 - 5A^7 + 7A^6 - 3A^5 + A^4 - 5A^3 + 8A^2 - 2A + I$	**2**	**3**	**10**
		OR			
5.		Reduce $6x^2 + 3y^2 + 3z^2 - 4xy - 2yz + 4xz$ to sum of squares by linear transformation and hence find the matrix of the transformation.	**2**	**3**	**10**
		UNIT-3			
6.	**(a)**	Verify Rolle's theorem for $\frac{\sin x}{e^x}$ in $(0, \pi)$	**3**	**3**	**5**
	(b)	Expand $f(x) = \cos x$ by Maclaurin's theorem with Lagrange's form of remainder.	**3**	**3**	**5**
		OR			
7.	**(a)**	Using Taylor's theorem, prove that $x - \frac{x^3}{6} < \sin x < x - \frac{x^3}{6} + \frac{x^5}{120}$, for $x > 0$	**3**	**3**	**5**
	(b)	Find the appropriate value of c used in Cauchy's Mean-Value theorem for $f(x) = \ln x$ in [1, e]	**3**	**3**	**5**
		UNIT-4			
8.	**(a)**	If $\log u = \frac{x^3 + y^3}{3x + 4y}$, find the value of $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y}$	**4**	**3**	**5**
	(b)	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)	**4**	**3**	**5**
		OR			

9.	**(a)**	Expand $x^2y+3y-2$ in powers of $(x-1)$ and $(y+2)$ using Taylor's theorem.	**4**	**3**	**5**
	(b)	Discuss the maxima and minima of $f(x,y)=x^3y^2(1-x-y)$	**4**	**3**	**5**
		UNIT-5			
10.	**(a)**	Evaluate $\iint xy\,dxdy$ over the positive quadrant of the circle $x^2+y^2=a^2$ by changing it in to polar coordinates	**5**	**3**	**5**
	(b)	Evaluate $\int_0^{\infty}\int_0^{x} xe^{\frac{-x^2}{y}}\,dxdy$ by changing the order of integration	**5**	**3**	**5**
		OR			
11.		Find the volume of the sphere $x^2+y^2+z^2=a^2$ by using triple integral.	**5**	**3**	**10**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

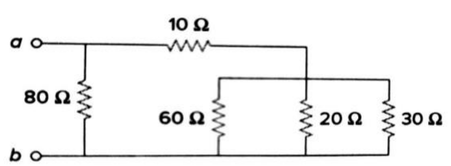
NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code: B23BS1102
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
I B.Tech. I Semester MODEL QUESTION PAPER					
ENGINEERING PHYSICS					
CSE, CSIT, ECE, EEE & IT					
Time: 3 Hrs.					**Max. Marks: 70 M**
Answer Question No.1 compulsorily					
Answer **ONE Question** from **EACH UNIT**					
Assume suitable data if necessary					
					10 x 2 = 20Marks
			CO	**KL**	**M**
1.	**a).**	State the Principle of Superposition.	**1**	**1**	**2**
	b).	Explain the double refraction phenomena of light.	**1**	**2**	**2**
	c).	What are lattice parameters?	**2**	**2**	**2**
	d).	Draw the lattice planes with Miller Indices (100) and (111).	**2**	**2**	**2**
	e).	What do you understand by polar and nonpolar dielectrics?	**3**	**1**	**2**
	f).	Define relative permeability, magnetic susceptibility and give their relation?	**3**	**2**	**2**
	g).	State the Heisenberg's uncertainty principle.	**4**	**1**	**2**
	h).	Define Fermi energy?	**4**	**1**	**2**
	i).	What are extrinsic semiconductors?	**5**	**2**	**2**
	j).	List out the characteristic properties of semiconductors.	**5**	**2**	**2**
					5 x 10 =50Marks
		UNIT-1			
2.	**a).**	Elaborate the essential conditions for producing sustained interference of light.	**1**	**2**	**4**
	b).	How are Newton's rings formed and deduce an expression for the wavelength of light?	**1**	**3**	**6**
		OR			
3.	**a).**	Analyze the diffraction of light at a single slit and obtain the condition for maxima.	**1**	**4**	**6**
	b).	What are Half wave plate and Quarter wave plate and mention their applications?	**1**	**2**	**4**
		UNIT-2			

4.	**a).**	Define Packing fraction of atomic crystals and calculate the Packing fraction for an FCC lattice?	**2**	**3**	**5**
	b).	What are Miller indices and explain how they are determined?	**2**	**3**	**5**
		OR			
5.	**a).**	Deduce the Bragg's X-ray diffraction condition?	**2**	**3**	**5**
	b).	Describe the Laue's method for the determination of crystal structure.	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	Explain the different types of Polarizations possible in dielectrics.	**3**	**2**	**4**
	b).	Deduce the Clausius-Mosotti equation and explain its significance in dielectrics?	**3**	**3**	**6**
		OR			
7.	**a).**	Classify the Magnetic materials based on atomic magnetic moment.	**3**	**2**	**4**
	b).	Describe the hysteresis exhibited by a ferromagnetic material and explain it using a suitable theory.	**3**	**3**	**6**
		UNIT-4			
8.	**a).**	Obtain the Schrodinger's time independent wave equation.	**4**	**3**	**6**
	b).	Calculate deBroglie wavelength of an electron moving with a velocity of $1/20^{th}$ of the velocity of light?	**4**	**3**	**4**
		OR			
9.	**a).**	Give an account of successes and failures of classical free electron theory.	**4**	**2**	**4**
	b).	Obtain an expression for the electrical conductivity of a metal using Quantum free electron theory.	**4**	**3**	**6**
		UNIT-5			
10.	**a).**	Derive an expression for the density of electrons in the conduction band of an intrinsic semiconductor?	**5**	**3**	**6**
	b).	Describe the variation of Fermi energy with temperature and dopant concentration in n-type semiconductor.	**5**	**2**	**4**
		OR			
11.	**a).**	Discuss the Hall effect, in detail, and explain its significance.	**5**	**3**	**6**
	b).	Distinguish between drift and diffusion currents in semiconductors.	**5**	**2**	**4**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE: Questions can be given as **a, b** splits or as a single Question for 10 marks

					Course Code: B23EE1101
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		I B.Tech. I Semester MODEL QUESTION PAPER			
		BASIC ELECTRICAL & ELECTRONICS ENGINEERING			
		CSE, CSIT, ECE, EEE & IT			
Time: 3 Hrs.					**Max. Marks: 70 M**
		PART – A: BASIC ELECTRICAL ENGINEERING			
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					5 x 1 = 5 Marks
			CO	**KL**	**M**
1.	**a).**	**Define** Ohm’s law.	**1**	**1**	**1**
	b).	**Define** Impedance.	**1**	**1**	**1**
	c).	**List** types of wind turbines	**2**	**1**	**1**
	d).	**State** two advantages of renewable energy sources?	**2**	**1**	**1**
	e).	**List** types of earthing methods.	**3**	**1**	**1**
					3 x 10 = 30 Marks
		UNIT-1			
2.	**a).**	**Explain** Kirchhoff‟s Laws with example	**1**	**3**	**5**
	b).	**Calculate** the equivalent resistance R_{ab} at terminals a-b for the given circuit. 	**1**	**3**	**5**
		OR			
3.	**a).**	**Derive** the expression RMS value of sinusoidal wave form $v(t) = V_m \sin\omega t$.	**1**	**3**	**5**
	b).	**Explain** (i) Active power (ii) Reactive power (iii) Apparent power in ac circuits.	**1**	**3**	**5**
		UNIT-2			
4.	**a).**	**Illustrate** the working of solar power plant with a neat layout.	**2**	**3**	**5**
	b).	**Explain** principle of operation transformer.	**2**	**3**	**5**

		OR			
5.		**Illustrate** the principle of working of a PMMC instrument with neat diagram.	**2**	**3**	**10**
		UNIT-3			
6.	**a).**	**Explain** the construction and principle of DC motor with neat sketch.	**3**	**3**	**5**
	b).	**Derive** the torque equation for DC Motor.	**3**	**3**	**5**
		OR			
7.	**a).**	**Illustrate** about the construction details and operation of a miniature circuit breaker (MCB)?	**3**	**3**	**5**
	b).	**Sketch** and **explain** Pipe Earthing method?	**3**	**3**	**5**
		PART – B: BASIC ELECTRONICS ENGINEERING			
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					5 x 1 = 5 Marks
			CO	**KL**	**M**
1.	**a).**	**List** the applications of Zener diode.	**1**	**1**	**1**
	b).	**Draw** the diagram of NPN and PNP transistors.	**1**	**1**	**1**
	c).	**Define** Rectifier.	**2**	**1**	**1**
	d).	**Convert** binary number to decimal number ,1011_2 to $(-----)_{10}$	**3**	**2**	**1**
	e).	**Write** Truth table of NAND gate.	**3**	**1**	**1**
					3 x 10 = 30 Marks
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	**Explain** the operation of PN junction Diode and **draw** the V-I characteristics.	**1**	**3**	**5**
	b).	**Illustrate** the operation of Zener Diode and **draw** its Characteristics.	**1**	**3**	**5**
		OR			
3.		**Draw** and explain the input and output characteristics of a transistor in CE configuration	**1**	**3**	**10**
		UNIT-2			
4.	**a).**	**Illustrate** the operation of Half wave rectifier with neat sketch.	**2**	**3**	**5**
	b).	**Explain** how the Zener diode acts as a voltage regulator.	**2**	**3**	**5**
		OR			

5.	**a).**	**Draw** the circuit diagram of Full wave rectifier and explain its operation.	**2**	**3**	**5**
	b).	**Draw** the block diagram of an electronic instrumentation system and explain its working.	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	**Write** the Truth Tables of Logic Gates – NOT, OR, AND, NOR and NAND	**3**	**3**	**5**
	b).	**Convert** the following number system into indicated system. i) $(256)_{10} = (\ldots\ldots\ldots\ldots)_{2}$ ii) $(F32C)_{16} = (\ldots\ldots\ldots)_{10}$	**3**	**3**	**5**
		OR			
7.	**a).**	**Solve** the Boolean expressions using Boolean algebra, Show: AB'C+B+BD'+ABD'+A'C=B+C	**3**	**3**	**5**
	b).	**Draw** and **explain** the Full adder circuit using half adders.	**3**	**3**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE: Questions can be given as **a, b** splits or as a single Question for 10 marks

Course Code: B23ME1101

SAGIRAMAKRISHNAMRAJUENGINEERINGCOLLEGE(A)	**R23**

I B.Tech I Semester-MODELQUESTION PAPER

ENGINEERING GRAPHICS

CE, ECE, EEE & ME

Time:3Hrs. **Max.Marks:70**

Answer any one Question from Each Unit

All questions carry equal Marks

Assume suitable data if necessary

		UNIT-I	**CO**	**KL**	**M**
1		Construct a parabola when the distance of the focus from directrix is 50mm.Also draw the tangent and normal at any point on the curve.	**1**	**3**	**14**
		OR			
2		A circle of 50mm diameter rolls along a straight line without slipping. Draw the curve traced out by a point P on the circumference, for one complete revolution of the circle. Draw a tangent and normal at any point on the curve.	**1**	**3**	**14**
		UNIT-II			
3	**a.**	Draw the projections of the following points on the same ground line, keeping the projectors 25mm apart. (i) Point A in the HP and lying 20mmbehind the VP; (ii) Point B is 40mm above the HP and 25mm in front of the VP; (iii) Point C is 25mm below the HP and 25mm behind the VP; (iv) Point D is 15mm above the HP and 50mm behind the VP.	**2**	**3**	**7**
	b.	The front view of a line, inclined at 30^0 to the V.P is 65mm long. Draw the projections of a line when it is parallel to and 40mm above the H.P, its one end being 30mm in front of the V.P.	**2**	**3**	**7**
		OR			
4		A line AB, of 80 mm long has its end A, 15 mm in front of VP and 20mm above HP. The other end B is 40mm above HP and 50mm in front of VP. Draw the projections of the line and determine the inclinations of the line with HP and VP.	**2**	**3**	**14**
		UNIT-III			
5		Draw the projections of a regular hexagon of 25mm side, having one of its sides in the H.P and inclined at 60^0 to the V.P, and its surface making an angle of 45^0 with the H.P.	**3**	**3**	**14**

		OR			
6		Draw the projections of a regular pentagon of 40mm side, having its surface inclined at 30^0 to the H.P and side parallel to the H.P and inclined at an angle of 60^0 to the V.P.	**3**	**3**	**14**
		UNIT-IV			
7		A hexagonal pyramid, base 25mm side and axis 50mm long, has an edge of its base on the ground. Its axis is inclined at 30^0 to the ground and parallel to the VP. Draw its projections.	**4**	**3**	**14**
		OR			
8		Draw the projections of a pentagonal prism, base 25mm side and axis 50mm long, resting on one of its rectangular faces on the H.P, with the axis inclined at 45^0 to the V.P.	**4**	**3**	**14**
		UNIT-V			
9		A square pyramid, base 40mm side and axis 65mm long, has its base on the H.P and all the edges of the base equally inclined to the V.P. It is cut by a section plane, perpendicular to the V.P, inclined at 45^0 to the H.P and bisecting the axis. Draw the sectional top view and true shape of the section.	**5**	**3**	**14**
		OR			
10		Draw the isometric projection of a cylinder of base diameter 30mm and axis height 60mm when axis is a) Horizontal and b) Vertical.	**5**	**3**	**14**

CO-COURSE OUTCOME KL-KNOWLEDGE LEVEL M-MARKS

NOTE: Questions can be given as **a, b** splits or as a single Question for 14 marks

Course Code: B23BS1201

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A) **R23**

I B.Tech. II Semester MODEL QUESTION PAPER

DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS

Common to all Programmes of Engineering

Time: 3 Hrs. **Max. Marks: 70 M**

Answer Question No.1 compulsorily

Answer **ONE Question** from **EACH UNIT**

Assume suitable data if necessary

10 x 2 = 20 Marks

			CO	KL	M
1.	**(a)**	Define Leibnitz's Linear differential equation. What is the Integrating factor of homogeneous differential equation $Mdx + Ndy = 0$	1	1	2
	(b)	Define the orthogonal trajectories of the family of curves.	1	1	2
	(c)	Solve$(D^2 + 4D + 4)y = 0$	2	3	
	(d)	Find the particular integral of $(D^2 + 1)y = \cos x$	2	3	2
	(e)	Form a P.D.E from $z = ax + by + c$	3	3	2
	(f)	Write the standard form of Lagrange's linear equation.	3	1	2
	(g)	Determine ∇r where $r = \sqrt{x^2 + y^2 + z^2}$	4	3	2
	(h)	If $\overline{F} = xy^2\bar{i} + 2x^2yz\bar{j} - 3yz^2\bar{k}$ find $div\,\overline{F}$ at (1, -1, 1)	4	3	2
	(i)	Write the formula for work done by a force $\overline{F}$ in moving a particle from a point A to a point B.	5	2	2
	(j)	State Stoke's theorem.	5	1	2

5 x 10 = 50 Marks

			CO	KL	M
		UNIT-1			
2.	**(a)**	Solve $\frac{dy}{dx} - \frac{2y}{x+1} = (x+1)^3$	1	3	5
	(b)	Solve $y \log y\, dx + (x - \log y)dy = 0$	1	3	5
		OR			
3.	**(a)**	If the air is maintained at 30°C and the temperature of the body cools from 100°C to 70° C in 15 minutes, determine the time at which the temperature of the body will be 40° C.	1	3	5
	(b)	Find the orthogonal trajectories of the family of parabolas $y = ax^2$	1	3	5
		UNIT-2			
4.	**(a)**	Solve $(D - 2)^2y = 8(e^{2x} + x^2)$	2	3	5

	(b)	Solve by the method of variation of parameters $\frac{d^2y}{dx^2} + y = \tan x$	**2**	**3**	**5**
		OR			
5.	**(a)**	Solve simultaneous equations $\frac{dx}{dt} + y = \text{sint},\ \frac{dy}{dt} + x = \text{cost}$, given that $x = 2$ and $y = 0$ when $t = 0$	**2**	**3**	**5**
	(b)	The damped LCR circuit is governed by the differential equation $L\frac{d^2q}{dt^2} + R\frac{dq}{dt} + \frac{q}{c} = 0$ where L, C, R are positive constants. Find the critical resistance.	**2**	**3**	**5**
		UNIT-3			
6.	**(a)**	Solve the equation $x\,(y-z)\,p + y\,(z-x)\,q = z\,(x-y)$.	**3**	**3**	**5**
	(b)	Solve $(D - D' - 1)\,(D - D' - 2)\,z = e^{2x-y}$	**3**	**3**	**5**
		OR			
7.		Solve $\left(D^2 - D'^2\right) z = e^{x+y} \sin(x + 2y)$	**3**	**3**	**10**
		UNIT-4			
8.	**(a)**	Find the directional derivative of $f = xy + yz + zx$ in the direction of vector $\bar{i} + 2\bar{j} + 2\bar{k}$ at the point (1, 2, 0).	**4**	**3**	**5**
	(b)	If $\vec{F} = 3x^2\vec{\imath} + 5xy^2\vec{\jmath} + 5xyz^3\vec{k}$, find $\nabla(\nabla.\vec{F})$	**4**	**3**	**5**
		OR			
9.	**(a)**	Prove that $(y^2 - z^2 + 3yz - 2x\ )\vec{\imath} + (\,3xz + 2xy\,)\vec{\jmath}$ + (3xy-2xz+2z)$\vec{k}$ is solenoidal.	**4**	**3**	**5**
	(b)	Find the angle between the surfaces $xy^2z = 3x + z^2$ and $3x^2 - y^2 + 2z = 1$ at the point $(1,-2,1)$	**4**	**3**	**5**
		UNIT-5			
10.	**(a)**	Find the work done by the force field $\vec{F} = (2x + y^2)\vec{\imath} + xz\vec{\jmath} + xyz\vec{k}$ in moving a particle along a straight line from (0,0,0) to (2,1,3).	**5**	**3**	**5**
	(b)	Evaluate $\oint_c \{(x^2y\,dx + x^2dy\}$ where C is circle $x^2 + y^2 = a^2$ by using Green's theorem.	**5**	**3**	**5**
		OR			
11		Verify Gauss – divergence theorem for $\vec{F} = 2xz\vec{\imath}$ +yz$\vec{\jmath} + z^2\vec{k}$ where S is an upper half of the sphere $x^2 + y^2 + z^2 = a^2$	**5**	**3**	**10**

COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE: Questions can be given as **a, b** splits or as a single Question for 10 marks

		Course Code: B23BS1203			
		SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)			**R23**
		I B.Tech. II Semester MODEL QUESTION PAPER			
		CHEMISTRY			
		CSE, CSIT, ECE, EEE & IT			
Time: 3 Hrs.					**Max. Marks: 70 M**
		Answer Question No.1 compulsorily			
		Answer **ONE Question** from **EACH UNIT**			
		Assume suitable data if necessary			
					10 x 2 = 20Marks
			CO	**KL**	**M**
1.	**a).**	Write the cell notation for Calomel Electrode	**1**	**2**	**2**
	b).	What is the reason for pitting corrosion to occur?	**1**	**2**	**2**
	c).	Define solar cell and solar panel?	**2**	**1**	**2**
	d).	List any two day to day commercial applications of nano technology?	**2**	**1**	**2**
	e).	The wave function of a particle in a 1-dimensional box is given by?	**3**	**1**	**2**
	f).	How do we differentiate atomic orbitals and molecular orbitals?	**3**	**2**	**2**
	g).	Give any two examples for thermosetting polymers?	**4**	**2**	**2**
	h).	How are polymers used in everyday life?	**4**	**2**	**2**
	i).	What is Lambert-Beer's Law?	**5**	**1**	**2**
	j).	How does temperature affect dissolved oxygen measurements?	**5**	**2**	**2**
					5 x 10 =50Marks
		UNIT-1			
2.	**a).**	What are the basic requirements for commercial batteries, explain construction, working principle of Zn-air batteries?	**1**	**3**	**5**
	b).	What are fuel cells? Explain the hydrogen-oxygen fuel cell and its advantages.	**1**	**3**	**5**
		OR			
3.	**a).**	Describe mechanism of electrochemical corrosion by taking Rusting of Iron as an example	**1**	**3**	**5**
	b).	Why does the small anodic area result in intense corrosion? Discuss the differential aeration corrosion with reactions?	**1**	**3**	**5**
		UNIT-2			
4.	**a).**	How does doping affect the conductivity of intrinsic semiconductor,	**2**	**3**	**5**

		explain with mechanism?			
	b).	Briefly Explain any five properties that occur in super conductors?	**2**	**3**	**5**
		OR			
5.	**a).**	How does temperature affect the efficiency of photovoltaic cells and what are the different components of photovoltaic solar panel power system?	**2**	**3**	**5**
	b).	How the nanomaterials are prepared by Sol-gel method	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	What is wave function and derive the Schrodinger wave equation?	**3**	**3**	**5**
	b).	What is the probability of locating a particle of mass **m** in a 1-D box? (Assume the particle is in the n=1).	**3**	**3**	**5**
		OR			
7.	**a).**	What is a hetero diatomic molecule? Draw the energy level diagram of CO molecule and calculate its bond order?	**3**	**3**	**5**
	b).	Outline the basic quantum-mechanical approach to deriving molecular orbitals from atomic orbitals by taking an example of homo diatomic molecule?	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Give preparation, properties and engineering applications of i) Nylon:6,6 ii) Bakelite	**4**	**3**	**5**
	b).	Differentiate between addition polymerization and condensation polymerization with suitable examples.	**4**	**3**	**5**
		OR			
9.	**a).**	Describe the mechanism of conduction? And factors influencing conduction in any organic polymer?	**4**	**3**	**5**
	b).	Mention some plastic materials used in electronic gadgets, Discuss properties and applications of poly vinyl chloride?	**4**	**3**	**5**
		UNIT-5			
10.	**a).**	Why are molecules absorbed in UV-Visible region? What are the types of electronic transitions that can occur in a molecule?	**5**	**3**	**5**
	b).	What is the principle of IR spectroscopy? How can we Calculate the fundamental modes of vibrations in any molecule.	**5**	**3**	**5**
		OR			
11.	**a).**	How does the Winkler Method work to determine the dissolved oxygen in the given sample?	**5**	**3**	**5**

	b).	Explain the determination of hardness of water by EDTA method?	**5**	**3**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

					Course Code: B23CE1201
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)					**R23**
I B.Tech. II Semester MODEL QUESTION PAPER					
BASIC CIVIL AND MECHANICAL ENGINEERING					
CSE, CSIT, ECE, EEE & IT					
Time: 3 Hrs.					**Max. Marks: 70 M**
PART-A: BASIC CIVIL ENGINEERING					
Answer Question No.1 compulsorily					
Answer **ONE Question** from **EACH UNIT**					
Assume suitable data if necessary					
					5x 1= 5 Marks
			CO	**KL**	**M**
1.	**a).**	Write about the difference between structural engineering and geo-technical engineering in terms of their primary focus and objectives.	**1**	**2**	**1**
	b).	Explain the advantages of using steel as a construction material.	**1**	**2**	**1**
	c).	Explain the importance of accuracy and precision in surveying.	**2**	**2**	**1**
	d).	Explain the importance of tunnels in transportation infrastructure.	**3**	**2**	**1**
	e).	Explain the concept of hydrology and its role in water resources management.	**3**	**2**	**1**
					3x 10 = 30 Marks
		UNIT-1			
2.	**a).**	Explain the significance and responsibilities of civil engineers within society?	**1**	**3**	**5**
	b).	List and briefly describe at least three major disciplines within civil engineering.	**1**	**3**	**5**
		OR			
3.	**a).**	Explain the significance of construction materials in civil engineering projects. List three essential construction materials and their applications.	**1**	**3**	**5**
	b).	Explain the concept of prefabricated construction and its benefits in detail, highlighting at least two advantages of using prefabricated components in construction projects?	**1**	**3**	**5**
		UNIT-2			
4.	**a).**	Explain the primary objective of surveying and demonstrate two practical applications of this field.	**2**	**3**	**5**

	b).	List and briefly describe two commonly used levelling instruments in surveying. Explain when you would use each of them.	**2**	**3**	**5**
		OR			
5.	**a).**	Explain the difference between true bearing and magnetic bearing. Why is it important to account for magnetic declination?	**2**	**3**	**5**
	b).	Explain how a digital elevation model (DEM) is used in modern contour mapping and list the advantages of using it compared to traditional methods.	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	Explain the significance of transportation in a nation's economic development. Provide two examples of how efficient transportation systems contribute to economic growth.	**3**	**3**	**5**
	b).	List and briefly describe the different types of highway pavements commonly used in transportation engineering. Include their primary characteristics and applications.	**3**	**3**	**5**
		OR			
7.	**a).**	List and describe the primary sources of water for domestic, industrial, and agricultural use. Explain the importance of each source.	**3**	**3**	**5**
	b).	Explain the role of dams in water resources management and list the types of dams based on their structure, providing a brief introduction to each type.	**3**	**3**	**5**

PART-B: BASIC MECHANICAL ENGINEERING

Time: 3 Hrs. **Max. Marks: 35 M**

Answer Question No.1 compulsorily

Answer **ONE Question** from **EACH UNIT**

Assume suitable data if necessary

5 x 1 = 5 Marks

			CO	KL	M
1.	**a).**	What are smart materials.	**1**	**1**	**1**
	b).	What is meant by Machining	**2**	**1**	**1**
	c).	Write the 4 strokes of IC engine	**2**	**1**	**1**
	d).	List out the advantages of chain drives	**3**	**2**	**1**
	e).	What are the different types of joints used in robots	**3**	**1**	**1**

3 x 10 = 30 Marks

		UNIT-1			
2.	**a).**	Elaborate the Role of Mechanical Engineering in society and in different sectors	**1**	**3**	**5**
	b).	Illustrate the technologies used in automotive and aerospace industries	**1**	**3**	**5**
		OR			
3.	**a).**	What are the engineering applications of composite materials.	**1**	**2**	**5**
	b).	Briefly discuss the classification of metallic materials.	**1**	**2**	**5**
		UNIT-2			
4.	**a).**	Briefly discuss the Principles of Casting	**2**	**2**	**5**
	b).	Discuss the importance of 3D printing and Smart manufacturing	**2**	**2**	**5**
		OR			
5.	**a).**	Distinguish between the 2-Stroke and 4-Stroke engines	**2**	**2**	**5**
	b).	Illustrate the working principle of Cochran Boiler.	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	Explain the working principle of Steam power plant	**3**	**2**	**5**
	b).	Discuss the working principle of nuclear power plant	**3**	**2**	**5**
		OR			
7.	**a).**	Discuss the belt drives and their applications.	**3**	**2**	**5**
	b).	Describe the applications of robots	**3**	**2**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE : Questions can be given as A,B splits or as a single Question for 10 marks

Course Code: B23EE1203

SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A) | **R23**

I B.Tech. II Semester MODEL QUESTION PAPER

ELECTRICAL CIRCUIT ANALYSIS-I

For EEE

Time: 3 Hrs. | **Max. Marks: 70 M**

Answer Question No.1 compulsorily

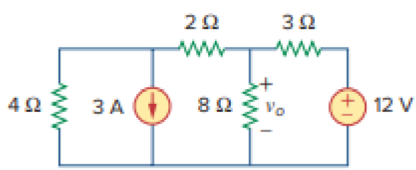
Answer **ONE Question** from **EACH UNIT**

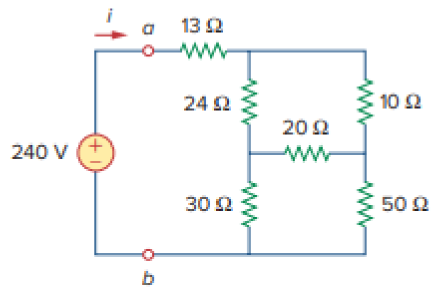
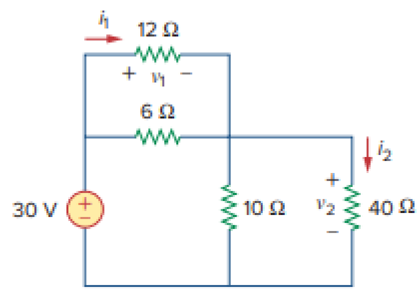
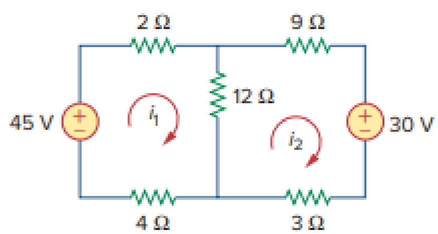
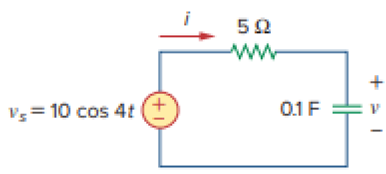
Assume suitable data if necessary

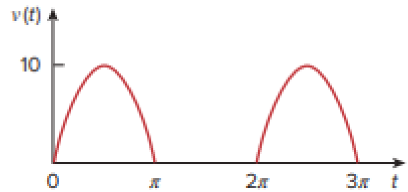
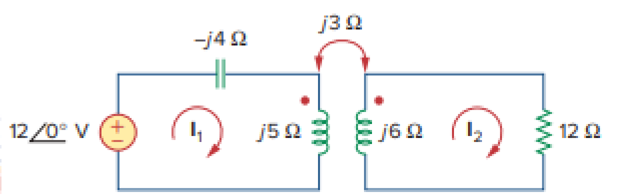
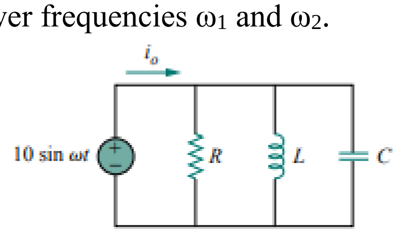
10 x 2 = 20 Marks

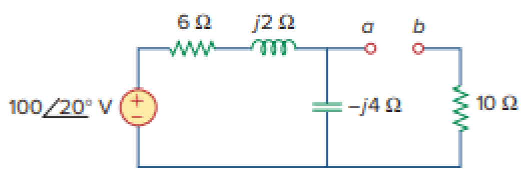
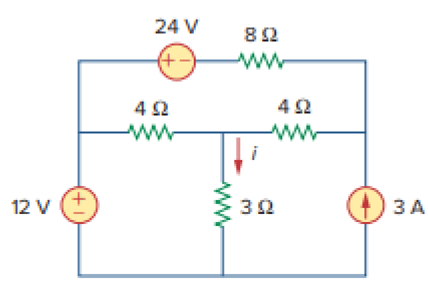
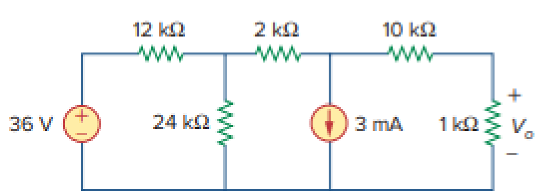
			CO	KL	M
1.	**a).**	**Distinguish** between active and passive element.	**1**	**2**	**2**
	b).	**Indicate** the relation between nodes, branches and loops in an electric circuit.	**1**	**2**	**2**
	c).	**Represent** the Phasor for the sinusoid $v = 20 \cos (2t+40^0)$ V.	**2**	**2**	**2**
	d).	**Draw** the power triangle.	**2**	**2**	**2**
	e).	**Distinguish** between self and mutual inductance.	**3**	**2**	**2**
	f).	**Explain** about balanced phase voltages in a three phase system.	**3**	**2**	**2**
	g).	**Sketch** the frequency vs current plot in a series RLC circuit	**4**	**3**	**2**
	h).	**Draw** the locus diagram of series RL circuit with constant reactance and variable resistance.	**4**	**3**	**2**
	i).	**Explain** the principle of reciprocity.	**5**	**2**	**2**
	j).	**Show** the condition for maximum power when load resistance is equal to source resistance.	**5**	**3**	**2**

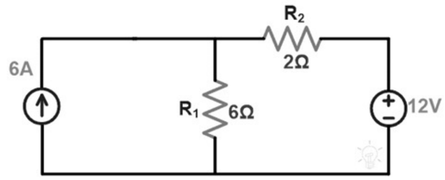
5 x 10 = 50 Marks

		UNIT-1			
2.	**a).**	**Calculate** V_o using source transformation for the circuit shown in Fig.1  Fig.1	**1**	**4**	**5**
	b).	**Calculate** equivalent resistance R_{ab} and find current ‘i’ in the circuit shown in Fig.2	**1**	**4**	**5**

		 Fig.2			
		OR			
3.	**a).**	**Analyze** the circuit shown in Fig.3 to find i_1 and i_2 using current division rule.  Fig.3	**1**	**4**	**5**
	b).	**Calculate** currents i_1 and i_2 in the circuit shown Fig.4 using mesh analysis.  Fig.4	**1**	**4**	**5**
		UNIT-2			
4.	**a).**	**Illustrate** the relationship for Phasor voltage and current in an inductor and draw the Phasor diagram.	**2**	**4**	**5**
	b).	**Calculate** v(t) and i(t) in the circuit shown in Fig.5  Fig.5	**2**	**4**	**5**
		OR			

5.	**a).**	**Calculate** the RMS value of the waveform shown in Fig.6  Fig.6	**2**	**4**	**5**
	b).	The voltage across the load is $v(t)=60\cos(\omega t-10^0)$V and current through the element in the direction of voltage drop is $i(t)=1.5\cos(\omega t+50^0)$A. **Calculate** (a)complex and apparent powers (b)real and reactive powers (c)load impedance.	**2**	**4**	**5**
		UNIT-3			
6.	**a).**	**Calculate** the Phasor currents I_1 and I_2 in the circuit shown in Fig.7  Fig.7	**3**	**4**	**5**
	b).	Obtain the expression for coefficient of coupling and analyze how mutual inductance effects the coefficient of coupling?	**3**	**4**	**5**
		OR			
7.	**a).**	Analyze the relation between line voltage, phase voltage and line current and phase current in a star connection.	**3**	**4**	**5**
	b).	A balanced star connected load of 4+j3 per phase is connected to a balanced 3-phase 400V supply. The phase current is 12A. **Calculate** (i) the total active power (ii) reactive power (iii) total apparent power.	**3**	**4**	**5**
		UNIT-4			
8.	**a).**	In the parallel RLC circuit shown in fig.8, R=8kΩ, L=0.2mh, and C=8μF. **Calculate** Resonant frequency 'ω_0',Quality factor 'Q_0', Band width 'B', Half power frequencies ω_1 and ω_2.  Fig.8	**4**	**4**	**5**

	b).	**Illustrate** the expression for resonant frequency, band width, quality factor in a series resonance circuit.	**4**	**4**	**5**
		OR			
9.	**a).**	A series connected circuit has R=4Ω, and L=25mH. **Calculate** the value of C that will produce a quality factor of 50. Find ω_1,ω_2 and B.	**4**	**4**	**5**
	b).	For the series connected RL circuit in which input voltage is V_{rms}=200V with a frequency of 50Hz, XL=25Ω and R= 50Ω. Examine the locus of the current, mark the range of 'i' for maximum and minimum values of 'R'.	**4**	**4**	**5**
		UNIT-5			
10.	**a).**	**Sketch** the Thevenin equivalent at terminals a-b for the circuit shown in Fig.9  Fig.9	**5**	**3**	**5**
	b).	**Calculate** current 'i' in the circuit shown in Fig.10, using superposition theorem  Fig.10	**5**	**4**	**5**
		OR			
11.	**a).**	**Calculate** Vo in the circuit shown in Fig.11 using Norton's theorem  Fig.11	**5**	**4**	**5**
	b).	**Analyze** the circuit and verify Tellegen's theorem shown in Fig.12.	**5**	**4**	**5**

		 Fig.12			

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE: Questions can be given as **a, b** splits or as a single Question for 10 marks

Course Code: B23CS1201	
SAGI RAMA KRISHNAM RAJU ENGINEERING COLLEGE (A)	**R23**
I B.Tech. II Semester MODEL QUESTION PAPER	
INTRODUCTION TO PROGRAMMING	
CE, ECE, EEE & ME	
Time: 3 Hrs.	**Max. Marks: 70 M**
Answer Question No.1 compulsorily	
Answer **ONE Question** from **EACH UNIT**	
Assume suitable data if necessary	
10 x 2 = 20Marks	

			CO	KL	M

1.	**a).**	Find the output of the following code:
		`#include <stdio.h>`
		`int main(void) {`
		`    int i = 1, j = 0, k;`
		`    k = (i & j) + (i | j) + (i ^ j) + !i + j;`
		`    printf("%d", k);`
		`    return 0;`
		`}`
			1	**3**	**2**

	b).	Differentiate pre and post increment with an example.	**1**	**3**	**2**
	c).	Show an example for continue statement in a loop.	**2**	**2**	**2**
	d).	Give an example for event-controlled loop.	**2**	**2**	**2**
	e).	Write a code snippet to print alternate elements of a one-dimensional array of n integers.	**3**	**2**	**2**
	f).	Apply nested loops and write a code snippet to find the sum of all elements of a two-dimensional array of size n x m.	**3**	**3**	**2**
	g).	State the disadvantages of pointers.	**4**	**1**	**2**
	h).	Identify the operations are not allowed on pointers?	**4**	**2**	**2**
	i).	Write a macro to find the largest of two numbers. Use conditional operator.	**5**	**3**	**2**
	j).	Find the output of the following code:	**5**	**3**	**2**

```c
#include <stdio.h>
int main(void) {
    FILE *f = fopen("file","w");
    int i;
    fputs("12A",f);
    fclose(f);
    f = fopen("file","r");
    fscanf(f,"%d",&i);
    fclose(f);
    printf("%d",i);
    return 0;
}
```

					5 x 10 =50Marks
		UNIT-1	**CO**	**KL**	**M**
2.	**a).**	Draw a flow chart to find the largest of three numbers.	**1**	**3**	**5**
	b).	Explain operator precedence and associativity with two examples.	**1**	**3**	**5**
		OR			
3.	**a).**	List all the bitwise operators and give one example for each with numerical values represented in binary.	**1**	**3**	**5**
	b).	Write a C program to calculate simple and compound interest. Given the term in months.	**1**	**3**	**5**
		UNIT-2			
4.	**a).**	Differentiate while and do-while loops with an example for each.	**2**	**3**	**5**
	b).	Write a C program to check if the given number is prime or not. Use for loop.	**2**	**3**	**5**
		OR			
5.	**a).**	Write a C program to find the sum of individual digits of a given integer number.	**2**	**3**	**5**
	b).	Use switch case to find the grade of a student given the marks. Show five grades. A, B, C, D, E and F for fail. If the marks are less than 40 then the grade is fail.	**2**	**3**	**5**
		UNIT-3			
6.	**a).**	Write a C program to sort the given array using bubble sort.	**3**	**3**	**5**
	b).	List any five string handling functions and show its usage.	**3**	**2**	**5**
		OR			
7.	**a).**	Write a C program to implement string concatenation of two strings str1 and str2, store the result in str3. (Do not use string function)	**3**	**3**	**5**

	b).	Develop C program to find the transpose of a matrix.	**3**	**3**	**5**
		UNIT-4			
8.	**a).**	Explain about structures and pointers. How can you access elements of a structure using its pointer notation. Discuss with an example.	**4**	**3**	**5**
	b).	Differentiate structures and unions.	**4**	**2**	**5**
		OR			
9.	**a).**	Apply bit fields and write a C program to demonstrate its use.	**4**	**3**	**5**
	b).	Write a C program to copy one structure variable to another structure of the same type	**4**	**3**	**5**
		UNIT-5			
10.	**a).**	Differentiate malloc and calloc with an example program.	**5**	**3**	**5**
	b).	Explain the storage classes in C.	**5**	**2**	**5**
		OR			
11.	**a).**	Write a C program to copy the contents of file1 to file2.	**5**	**3**	**5**
	b).	Discuss the random file access functions in C.	**5**	**2**	**5**

CO-COURSE OUTCOME **KL-KNOWLEDGE LEVEL** **M-MARKS**

NOTE: Questions can be given as **a, b** splits or as a single Question for 10 marks