CODE: A10101	R23	H.T.No:									

SET-1

RAVINDRA COLLEGE OF ENGINEERING FOR WOMEN

(AUTONOMOUS)

B.Tech I Year II Semester Regular Examinations May 2025

Subject Name: Basic Civil & Mechanical Engineering

Branch: ECE

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

Note: Part A must be answered from page no 3-16 and Part B must be answered from 19-34 pages

PART-A (Civil Engineering Part) Answer all questions, each question carries one marks						
1	a	List out the various subdivisions of the Civil Engineering.	1M	CO1	L1
	b	List the uses of Bricks?	1M	CO1	L1
	c	Mention any four uses of the Surveying.	1M	CO2	L1
	d	Mention the types of Bearings.	1M	CO2	L1
	e	Define Rigid pavements.	1M	CO	L1
Answer all three units, 03 X 10 = 30 Marks					
UNIT-I					
2	a	Explain elaborately the role of Civil Engineer in the society.	5M	CO	L2
	b	State the importance of Geo-technical Engineering?	5M	CO1	L5
OR					
3	a	Explain about the types of cement in Detail?	5M	CO1	L2
	b	Describe briefly about the water resources, structural and transportation Engineering.	5M	CO	L2
UNIT-II					
4	a	The following staff readings were observed successively with a level, the instrument have been moved after third, sixth and eighth readings: 3.150, 1.605,0.920,2.600,2.900, 1.125, 0.605, 2.265 m. calculate the R.L of points if the first reading was taken with a staff held on a bench mark of 110.0 m carryout the arithmetic check?	10M	CO2	L3
OR					
5	a	Summarize the objectives of surveying?	5M	CO2	L2
	b	Discuss about Leveling instruments used for Leveling?	5M	CO2	L6
UNIT-III					
6	a	Explain the types and important components of airports.	5M	CO3	L2
	b	Explain the types of railway gauges and sleepers.	5M	CO3	L2
OR					
7	a	Illustrate the importance of Environmental engineering?	5M	CO3	L2
	b	Write short notes on Railway engineering?	5M	CO3	L2
PART-B (Mechanical Engineering Part) Answer all questions, each question carries one marks					
8	a	What is composite material?	1M	CO1	L1
	b	Write any two forming process.	1M	CO1	L1
	c	What is function of boiler?	1M	CO2	L1

	d	What are four strokes in petrol engine?	1M	CO2	L1
	e	List out types of Engineering materials?	1M	CO3	L1
Answer all three units, 03 X 10 = 30 Marks					
UNIT-I					
9		Explain the contributions of Mechanical Engineering to the welfare of society?	10M	CO1	L2
OR					
10		What are the different types of ferrous metals, explain the basic properties and its applications?	10M	CO1	L2
UNIT-II					
11		What is mean by casting? Explain the principles of casting with neat sketch?	10M	CO2	L2
OR					
12		Explain various components and working of Hybrid vehicles with neat sketch.	10M	CO2	L2
UNIT-III					
13		Discuss in detail working principle of Nuclear Power plant with neat sketch.	10M	CO3	L2
OR					
14	a	Explain about the Robot configurations with neat Sketches?	5M	CO3	L2
	b	What are the applications of robots?	5M	CO3	L1

*****

CODE: A10004	R23	H.T.No:									

SET-1

RAVINDRA COLLEGE OF ENGINEERING FOR WOMEN

(AUTONOMOUS)

B.Tech I Year II Semester Regular Examinations May 2025

Subject Name: Chemistry

Branch: ECE

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

Instructions:

1. Answer all 10 questions from Part-A. Each question carries two marks
2. Answer one full question from each unit in Part-B. Each full question carries 10 marks

PART-A					
1	a	What is bond order and give the formula to calculate the bond order.	2M	CO1	BTL1
	b	Write the significance of Ψ and Ψ^2.	2M	CO1	BTL2
	c	Define semiconductor with an example.	2M	CO2	BTL1
	d	Write any four applications of carbon nano tubes?	2M	CO2	BTL3
	e	What is an electro chemical cell?	2M	CO3	BTL1
	f	Define the electro chemical sensor.	2M	CO3	BTL1
	g	What is the functionality of a monomer?	2M	CO4	BTL1
	h	Define biodegradable polymer with an example.	2M	CO4	BTL1
	i	State the Beer-Lamberts law.	2M	CO5	BTL1
	j	Define electromagnetic spectrum.	2M	CO5	BTL1
PART-B					
UNIT-I					
2	a	Explain the molecular orbital energy level diagram of CO molecule with magnetic property.	5M	CO1	BTL2
	b	Describe the postulates of molecular orbital theory.	5M	CO1	BTL2
OR					
3	a	Explain the π-molecular energy level diagram of 1,3-butadiene.	5M	CO1	BTL2
	b	Explain the molecular orbital energy level diagram of O_2 molecule with magnetic property.	5M	CO1	BTL2
UNIT-II					
4	a	What are the properties and applications of fullerenes?	5M	CO2	BTL3
	b	Explain the classification and applications of super conductors.	5M	CO2	BTL3
OR					
5	a	What are the properties and applications of graphines?	5M	CO2	BTL3
	b	Explain the classification and applications of super capacitors.	5M	CO2	BTL2
UNIT-III					
6	a	Explain the derivation of Nernst equation.	5M	CO3	BTL2
	b	Discuss the conductometric titrations of strong acid vs strong base.	5M	CO3	BTL2
OR					
7	a	Explain the construction and working principle of H_2-O_2 fuel cell.	5M	CO3	BTL2
	b	Explain the construction and working principle of Li-ion battery.	5M	CO3	BTL2

UNIT-IV					
8	a	Differentiate the thermoplastics and thermosetting plastics.	5M	CO4	BTL2
	b	Explain the preparation, properties and applications of Buna-S rubber.	5M	CO4	BTL3
OR					
9	a	Explain the preparation and applications of Bakelite.	5M	CO4	BTL3
	b	Explain the mechanism of conduction and application of poly acetylene.	5M	CO4	BTL2
UNIT-V					
10	a	Explain the instrumentation of UV-Visible spectroscopy.	5M	CO5	BTL2
	b	What are the electronic transitions of UV-Visible spectroscopy?	5M	CO5	BTL1
OR					
11	a	Explain the instrumentation of IR spectroscopy.	5M	CO5	BTL2
	b	Discuss the applications of HPLC?	5M	CO5	BTL3

*****

CODE: A10001	**R23**	**H.T.No:**									

RAVINDRA COLLEGE OF ENGINEERING FOR WOMEN

(AUTONOMOUS)

B.Tech I Year II Semester Regular Examinations MAY 2025

Subject Name: Communicative English

Time: 3 Hours Branch: ECE **Max. Marks: 70**

Instructions:

1. Answer all 10 questions from Part-A. Each question carries two marks
2. Answer one full question from each unit in Part-B. Each full question carries 10 marks

PART-A					
1	a	Write O' Henry's views in The Gift of Magi.	2M	CO1	BTL1
	b	Define Scanning in Reading Skills.	2M	CO1	BTL5
	c	Explain the lines: "For men may come and men may go. But I go on forever."	2M	CO2	BTL1
	d	Write a short note on Homonyms and give two examples.	2M	CO2	BTL2
	e	What is the difference between summarizing and paraphrasing?	2M	CO3	BTL5
	f	Whether Self-awareness is helpful to intrapersonal communication. State your reasons.	2M	CO3	BTL1
	g	Classify types of data interpretation methods.	2M	CO4	BTL5
	h	Describe Elon Musk's childhood and Early entrepreneurship.	2M	CO4	BTL1
	i	Write a short paragraph on "Film and piracy industry".	2M	CO5	BTL4
	j	Explain different types of essays.	2M	CO5	BTL4
PART-B					
UNIT-I					
2	a	What moral lessons are stressed in the story "The Gift of the Magi"?	5M	CO1	BTL1
	b	Write the meaning of the root words: i) bene ii) dem iii) geo iv) omni v) phil	5M	CO1	BTL2
OR					
3	a	Rewrite the jumbled sentences in the correct order. i) What do subjects you teach? ii) would like you go to back there? iii) Engineer my father an is. iv) is going son join to new a next company year. v) Monday in delhi begins on The National Film festival.	5M	CO1	BTL2
	b	Write a short note on the dilemma and financial condition of Della and Jim in The Gift of Magi.	5M	CO1	BTL1
UNIT-II					
4		Define Homophones, Homonyms and Homographs with suitable examples.	10M	CO2	BTL2
OR					
5	a	How does the poet use the brook to draw a parallel with a man's life?	5M	CO2	BTL1
	b	Compose a paragraph on "Social Media and the Youth".	5M	CO2	BTL4
UNIT-III					

6	a	What is SpaceX, and what has been its impact on space exploration?	5M	CO3	BTL1
	b	Fill in the blanks with either 'be/have' form that agrees with the subject of the sentences in the following: i) Neither of my brothers _____ any children. ii) The fourth innings of the match _____ began. iii) Mathematics _____ an interesting subject. iv) The shop, with all its goods, _____ insured. v) Aditi is one of the girls who _____ selected.	5M	CO3	BTL3
		OR			
7	a	How would you shorten the sentences while summarising a text?	5M	CO3	BTL5
	b	Choose the correct collocations from the below and fill in the blanks: **(record time spare time precious time buy time bang on time)** i) Jyothi wasn't ready for the presentation. She tried to _____ by requesting Rekha to go before her. ii) Krishna wasn't late. He came exactly at 9:30 AM – he was _____. iii) Leela spends all her _____ helping others. iv) Tanya was so eager to finish that she got done in _____. v) I can't spend my _____ on trivial pursuits.	5M	CO3	BTL2
		UNIT-IV			
8	a	What announcement by the National Peace Council does Elizabeth show her brother?	5M	CO4	BTL1
	b	Explain the differences between Bar graphs and Pie charts in representing data.	5M	CO4	BTL4
		OR			
9		Develop a dialogue using phrases while asking for and giving information for the given situation: "Ashmitha speaks to the receptionist to reserve a room at the Dolphin Hotel".	10M	CO4	BTL6
		UNIT-V			
10		How does intrapersonal communication help to overcome our daily challenges?	10M	CO5	BTL1
		OR			
11	a	Draft an expository essay on "The role of the youth in nation building".	5M	CO5	BTL4
	b	Correct errors in the following sentences. i) The girls sat down besides the lake. ii) They left in midnight to their village. iii) Among the two brothers, Sridhar is the best speaker. iv) The shop is under my flat. v) Manu has been living at Dubai since ten years.	5M	CO5	BTL3

*****

CODE: A10009	R23	H.T.No:									

RAVINDRA COLLEGE OF ENGINEERING FOR WOMEN

(AUTONOMOUS)

B.Tech I Year II Semester Regular & Supplementary Exams May – 2025

Subject Name: **Differential Equations & Vector Calculus**

Branch: **Common for CSE and ECE**

SET-1

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

Instructions:

1. Answer all 10 questions from Part-A. Each question carries two marks
2. Answer one full question from each unit in Part-B. Each full question carries 10 marks

PART-A					
1	a	Define Linear differential Equation?	2M	CO1	BTL1
	b	State Newton's Law of cooling and Law of Growth.	2M	CO1	BTL1
	c	Solve $(D^2-4D+4)\ y=0$	2M	CO2	BTL2
	d	Solve particular of $(D^2+4)y = sin\ 2\ x$	2M	CO2	BTL2
	e	Form PDE by eliminating arbitrary constants a and b from $z = (x^2 + a)(y^2 + b)$	2M	CO3	BTL2
	f	Solve p+q=1	2M	CO3	BTL2
	g	Define Irrotational vector?	2M	CO4	BTL1
	h	Find div $\vec{f}$ for $\vec{f} = z\vec{i} + x\vec{j} + yk\vec{}$.	2M	CO4	BTL1
	i	State Green's theorem in a plane.	2M	CO5	BTL1
	j	State the Gauss divergence theorem.	2M	CO5	BTL1
PART-B					
UNIT-I					
2	a	Solve $\left(1+e^{\frac{x}{y}}\right)dx + e^{\frac{x}{y}}\left(1-\frac{x}{y}\right)dy = 0$	5M	CO1	BTL3
	b	Solve $2xydy - (x^2+y^2+1)dx = 0$	5M	CO1	BTL3
OR					
3		If the temperature of air is 25℃ and the temperature of the body drops from 75℃ to 65℃ in 10 minutes. Determine when the temperature will be 55℃ and also find the temperature after 20 minutes	10M	CO1	BTL4
UNIT-II					
4	a	Solve $(D^3+2D^2+D)y = e^{2x}$	5M	CO2	BTL3
	b	Solve $(D^2+1)y = x^3$	5M	CO2	BTL3
OR					
5		Solve by the method of variation of parameters, $(D^2+a^2)y$ = Cosec ax	10 M	CO2	BTL3
UNIT-III					
6	a	Form the PDE by eliminating the arbitrary functions form $z = f(x^2+y^2+z^2)$	5M	CO3	BTL3

	b	Solve $x^2(y-z)p + y^2(z-x)q = z^2(x-y)$	5M	CO3	BTL3
		OR			
7		Solve $(D^3 - 3D^2D' + 4D'^3)z = e^{x+2y}$	10M	CO3	BTL3
		UNIT-IV			
8	a	Determine the directional derivative of the function $f = xy + yz + zx$ in the direction of a vector $i + 2j + 2k$ at the point (1, 2 , 0)	5M	CO4	BTL3
	b	Determine curl $\bar{f}$, where $\bar{f} = \text{grad}(x^3 + y^3 + z^3 - 3xyz)$.	5M	CO4	BTL3
		OR			
9		Show that the vector $(x^2 - yz)\,i + (y^2 - zx)\,j + (z^2 - xy)\,k$ is irrotational and find its scalar potential.	10M	CO4	BTL3
		UNIT-V			
10	a	Evaluate the work done in moving a particle in the force field $\bar{F} = 3x^2\bar{i} + (2xz - y)\bar{j} + z\bar{k}$ along the straight line from (0,0,0) to (2,1,3).	5M	CO5	BTL5
	b	Evaluate $\int_C y^2dx - 2x^2dy$ along the parabola $y = x^2$ from (0,0) to (2,4).	5M	CO5	BTL5
		OR			
11		Verify stokes theorem for $f = (x^2 + y^2)i - 2xyj$ taken round the rectangle bounded by the lines $x = \pm a, y = 0, y = b$.	10M	CO5	BTL4

*****

CODE: A10205	R23	H.T.No:										

RAVINDRA COLLEGE OF ENGINEERING FOR WOMEN

Regular & (AUTONOMOUS)

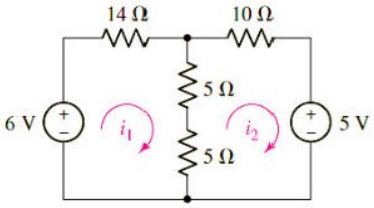
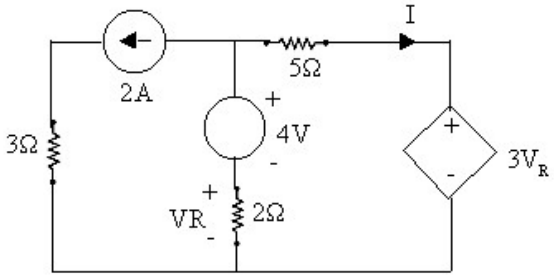
B.Tech I Year II Semester Supplementary Examinations June – 2025

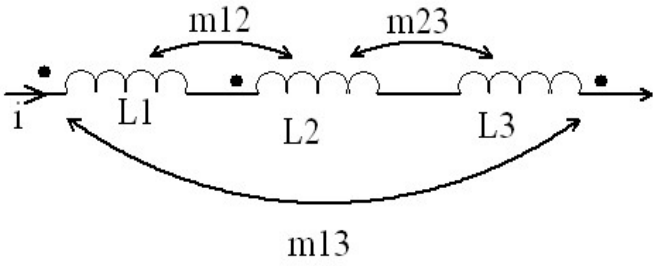
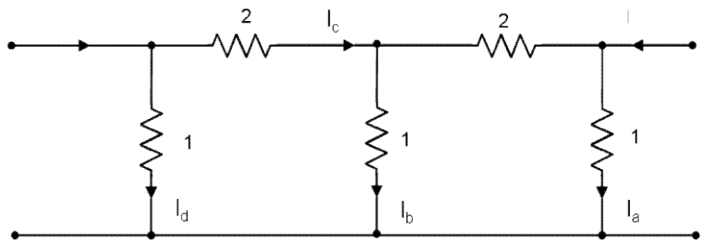
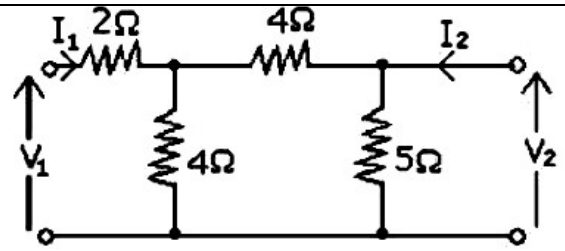
Subject Name: **NETWORK ANALYSIS**

Branch: ECE

SET-1

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

PART-A Answer all questions, each question carries two marks					
1	a	State Kirchhoff's current and voltage law.	2M	CO	BTL
	b	State maximum power transfer theorem	2M	1	L1
	c	What is meant by transient response?	2M	1	L1
	d	LT{ cos ωt } =	2M	2	L2
	e	Define RMS value and Average value	2M	2	L1
	f	What is meant by super mesh?	2M	3	L1
	g	Define Flux density	2M	3	L2
	h	Define Self-inductance	2M	4	L1
	i	State the relationship between different parameter sets in two-port networks	2M	4	L1
	j	Define Two port network with an example?	2M	5	L2
Answer all three units, 05 X 10 = 50 Marks					
UNIT-I					
2	a	State and explain Thevenin's theorem with an example.	5M	CO1	BTL2
	b	Determine the currents i_1 and i_2 in the circuit shown below 	5M	CO1	BTL2
OR					
3	a	State and explain Super position theorem	4M	CO1	BTL3
	b	Obtain the current I in the network shown by Super Position Theorem. 	6M	CO1	BTL4
UNIT-II					
4	a	Derive the transient response of a series RL circuit for AC Excitation and draw the response of the curve?	10M	CO1	BTL3
OR					
5	a	In a series RLC circuit, R = 16Ω, L=2.5mH, and c=1μF. A dc voltage of 40 V is applied at t=0. Obtain i(t).	10M	CO1	BTL4
UNIT-III					
6	a	Derive the steady state expression for the current response in RLC series circuit with a sinusoidal Source	10M	CO2	BTL3

		OR			
7	a	Explain about star to delta conversion	5M	CO2	BTL2
	b	A series RC circuit has R=10Ω, C=200μF, applied with 200 sin314t. volts. Find the i(t) at steady state.	5M	CO2	BTL4
		UNIT-IV			
8		What is the condition for frequency response? Derive the followings for series circuit (i) Response frequency (ii) Half Power frequencies (iii) Band width	2M 3M 3M 2M	CO3	BTL3
		OR			
9	a	What is coupling coefficient? Derive the expression for it.	5M	CO3	BTL2
	b	Find the total inductance of the three series connected couple coils in below If L1 = 1H, L2 = 2H, L3 = 5H M12 = 0.5H, M23= 1H, M13= 1H 	5M	CO3	BTL4
		UNIT-V			
10	a	Determine Z-parameters for network shown below? 	5M	CO4	BTL4
	b	Express the Y parameters in terms of ABCD– parameters	5M	CO4	BTL2
		OR			
11	a	 Determine transmission line parameters	5M	CO5	BTL4
	b	Given a two-port network with h11=10Ω, h12=0.5, h21=20, and h22=0.02mhos, determine the input and output currents when the network is terminated with a load resistance RL=100Ω.	5M	CO5	BTL4

*****