O.P.Code: 23HS0840	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. I Year I Semester Supplementary Examinations August-2025

ENGINEERING PHYSICS

(Common to ECE, CSE, EEE, CSIT)

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

PART-A

(Answer all the Questions **10 x 2 = 20** Marks)

1	a	Define Interference.	CO1	L1	2M
	b	Define Diffraction Grating.	CO1	L1	2M
	c	Define lattice parameter.	CO2	L1	2M
	d	What is (i) Unit cell (ii) Basis	CO2	L1	2M
	e	Define dielectric polarization.	CO3	L1	2M
	f	What is hysteresis?	CO4	L1	2M
	g	What are matter waves.	CO5	L1	2M
	h	Define mean free path.	CO5	L1	2M
	i	Write any two difference between Intrinsic and Extrinsic semiconductors.	CO6	L2	2M
	j	Define Hall effect.	CO6	L1	2M

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

2	a	State and explain principle of superposition.	CO1	L2	4M
	b	Discuss the theory of interference of light due to thin films by reflection with suitable ray diagram.	CO1	L2	6M

OR

3	a	Explain the production of plane polarized light using Nicol Prism.	CO1	L2	6M
	b	Describe the propagation of polarized light in Quarter –Wave plate.	CO1	L3	4M

UNIT-II

4	a	Show that Face centered cubic crystal structure has more closely packed structure than SC and BCC.	CO2	L3	10M

OR

5	a	Explain how crystal structure determined by Powder X-Ray diffraction method.	CO2	L2	7M
	b	What are the advantages of Powder X-Ray diffraction method?	CO2	L1	3M

UNIT-III

6	a	Deduce an expression for Lorentz field relating to Dielecric material.	CO3	L4	8M
	b	Write the causes for Dielectric loss.	CO3	L4	2M

OR

	a	Distinguish between Soft and Hard magnetic material.	CO4	L2	8M
7	b	A paramagnetic material has 1028 atoms per m^3. Its susceptibility at 350 K is 2.8×10^{-4}. Calculate the susceptibility at 300 K.	CO4	L3	2M

UNIT-IV

8	a	Derive Schrödinger's time dependent wave equation.	CO5	L3	7M
	b	Explain the physical significance of wave function.	CO5	L2	3M

OR

9	a	What are the advantages of quantum free electron theory over classical free electron theory?	CO5	L1	4M
	b	Derive an expression for electrical conductivity in a metal by quantum free electron theory.	CO5	L3	6M

UNIT-V

10	a	Explain the formation of n-type semiconductors with banddiagram	CO6	L2	7M
	b	In an Intrinsic semiconductor, the energy gap is 1.2 eV. Calculate the ratio between conductivity at 600K and at 300K.	CO6	L3	3M

OR

11	a	Explain the formation of energy bands in solids.	CO6	L2	4M
	b	Classify the solids into conductor, semiconductor & insulators based on band theory of solids.	CO6	L2	6M

***** END *****

O.P.Code: 23HS0810	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. I Year I Semester Supplementary Examinations August-2025

COMMUNICATIVE ENGLISH

(Common to CE, MECH, CSM, CIC, CAD, CCC & CAI)

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

PART-A

(Answer all the Questions **10 x 2 = 20** Marks)

1	a	Mention any two capitalization rules	CO1	L2	2M
	b	What is the affix of —independent?	CO1	L1	2M
	c	Write about the structure of a paragraph.	CO2	L2	2M
	d	Frame examples of your own for the following. i) Homophones ii) Homonyms	CO2	L2	2M
	e	Explain the general strategies of Reading Comprehension.	CO3	L2	2M
	f	Write any two compound words.	CO3	L1	2M
	g	What are the main parts of a formal letter?	CO5	L1	2M
	h	Change the following sentences from active voice to passive voice. i. Ram played hockey. ii. Children like sweets.	CO5	L1	2M
	i	Write any two factors for effective reading.	CO6	L2	2M
	j	Write about present tense with suitable examples.	CO6	L2	2M

PART-B

(Answer all Five Units **5 x 10 = 50** Marks)

UNIT-I

2	a	Explain the central theme of the essay —The Gift of the Magi‖	CO1	L1	5M
	b	Describe Mechanics of Writing.	CO1	L2	5M

OR

3	a	Use the appropriate punctuation marks for the following sentences. i. john said to Him i am not happy now ii. Do you recall my name my address my job my passion iii. You are the right person for the job arent you iv. In the words of Murphys Law Anything that can go wrong will go wrong v. A textbook can be a wall between teacher and class	CO1	L1	5M
	b	Write any five capitalization rules with examples.	CO1	L2	5M

UNIT-II

4	a	Write a brief note on —The Brook‖ by Alfred Lord Tennyson.	CO2	L2	5M
	b	Fill in the blanks with suitable articles. i. He has ……. one rupee note in pocket. ii. Varanasi is …… holy city. iii. John is …… European. iv. She is ……. honest woman. v. Honesty is …… best policy.	CO2	L1	5M

OR

5	a	Define homograph. Mention five meaningful sentences by using homograph.	CO2	L2	5M
	b	Fill in the blanks with suitable Cohesive Devices. (while, besides, before, and, though, whereas) i. ---------- he worked hard, he failed. ii. Raju celebrated his birthday on 10th of December ---------- Mohan celebrated his birthday on 12th of December. iii. ---------- he is an English teacher, he can speak Telugu. iv. ---------- he was going to market, he met his old friend. v. He is planning to meet the minister---------- the chief secretary.	CO2	L1	5M
		UNIT-III			
6	a	What are the DOs and Don'ts of paraphrasing and classify it?	CO3	L1	5M
	b	Describe the types of compound words.	CO4	L2	5M
		OR			
7	a	What are the significant achievements of Elon Musk?	CO4	L1	5M
	b	Explain any five rules of sub-verb agreement with examples.	CO4	L2	5M
		UNIT-IV			
8	a	Describe a couple of the peace toys' that Harvey brings for Eric and Bertie. What do these toys represent?	CO5	L2	5M
	b	Write a Resume to apply for the job you dream of today.	CO5	L2	5M
		OR			
9	a	Write a few examples of jargon as a barrier to communication.	CO5	L2	5M
	b	Write a letter to your friend about your visit with your classmates to Satish Dhawan Space Centre (SDSC), Sriharikota, A.P.	CO5	L2	5M
		UNIT-V			
10	a	What are the characteristics of an essay?	CO6	L1	5M
	b	Write the strategies of effective reading.	CO6	L2	5M
		OR			
11	a	What are Technical Jargons? Illustrate them with suitable examples.	CO6	L2	5M
	b	Write an essay on 'Wonders of Science'.	CO6	L2	5M

***** END *****

O.P.Code: 23HS0830	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. I Year I Semester Supplementary Examinations August-2025

LINEAR ALGEBRA & CALCULUS

(Common to All)

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

PART-A

(Answer all the Questions **10 x 2 = 20** Marks)

1	a	Solve by Gauss-Seidel method $x - 2y = -3\,; 2x + 25y = 15.$	CO1	L3	2M
	b	State Cauchy–Binet formulae.	CO1	L1	2M
	c	Find the Eigne values of the matrix $A = \begin{bmatrix} 1 & 3 & 4 \\ 0 & 2 & 5 \\ 0 & 0 & 3 \end{bmatrix}$	CO2	L3	2M
	d	State Cayley Hamilton theorem	CO2	L1	2M
	e	State Rolle's theorem.	CO3	L1	2M
	f	State Cauchy's mean value theorem.	CO3	L1	2M
	g	Define Continuity of a function of two variables at a point.	CO5	L1	2M
	h	If $x = u(1 - v);\ y = uv$ *then prove that* $J\left(\frac{x,y}{u,v}\right) = u$	CO5	L2	2M
	i	Find the area enclosed by the parabolas $x^2 = y$ *and* $y^2 = x.$	CO6	L1	2M
	j	Evaluate $I = \int_0^1 \int_1^2 \int_2^3 xyzdxdydz$	CO6	L5	2M

PART-B

(Answer all Five Units **5 x 10 = 50** Marks)

UNIT-I

2	a	Find whether the following equations are consistent if so solve them $x + y + 2z = 4\,; 2x - y + 3z = 9\,; 3x - y - z = 2.$	CO1	L3	5M
	b	Reduce the matrix $A = \begin{bmatrix} -2 & -1 & -3 & -1 \\ 1 & 2 & 3 & -1 \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & -1 \end{bmatrix}$ into Echelon form and find its rank?	CO1	L3	5M

OR

3		Show that the only real number λ for which the system $x + 2y + 3z = \lambda x;\ 3x + y + 2z = \lambda y;\ 2x + 3y + z = \lambda z$ has non-zero solution is 6 and also solve them when λ=6.	CO1	L2	10M

UNIT-II

4		Find the Eigen values and corresponding Eigen vectors of the matrix $A = \begin{bmatrix} 6 & -2 & 2 \\ -2 & 3 & -1 \\ 2 & -1 & 3 \end{bmatrix}$.	CO2	L3	10M

OR

5	a	Identify the nature of the Quadratic form $-3x_1^2 - 3x_2^2 - 3x_3^2 - 2x_1x_2 - 2x_1x_3 + 2x_2x_3$.	CO2	L2	5M
	b	Determine the Eigen values of A^{-1} where $A = \begin{bmatrix} 1 & 0 & -1 \\ 1 & 2 & 1 \\ 2 & 2 & 3 \end{bmatrix}$	CO2	L3	5M

UNIT-III

6	a	Verify Cauchy's Mean value theorem for $f(x) = x^3$ *and* $g(x) = x^2$ *in* [1,2]	CO3	L2	5M
	b	Expand $sinx$ in powers of $(x - \frac{\pi}{2})$ up to the term containing $(x - \frac{\pi}{2})^4$ assigning Taylor's series.	CO4	L2	5M

OR

7	a	Verify Rolle's theorem for the function $f(x) = x(x+3)e^{\frac{-x}{2}}$ in $[-3, 0]$	CO3	L2	6M
	b	Obtain the Maclaurin's series expression of the following functions: i) e^x ii) $cosx$ iii) $sinx$	CO4	L2	4M

UNIT-IV

8		Expand $x^2y + 3y - 2$ in powers of $(x-2)$ *and* $(y+2)$ up to the term of 3rd degree.	CO5	L2	10M

OR

9	a	Examine the function for extreme value $f(x,y) = x^4 + y^4 - 2x^2 + 4xy - 2y^2;\ (x > 0, y > 0)$.	CO5	L4	5M
	b	Find the minimum value of $x^2 + y^2 + z^2$ *given* $x + y + z = 3a$.	CO5	L1	5M

UNIT-V

10	a	Calculate the volume of the solid bounded by the planes $x = 0, y = 0$, $x + y + z = a$ *and* $z = 0$.	CO6	L1	5M
	b	Evaluate $\int_{-1}^{1}\int_{0}^{z}\int_{x-z}^{x+z}(x+y+z)dxdydz$	CO6	L5	5M

OR

11	a	Evaluate the triple integral $\iiint xy^2zdxdydz$ taken through the positive octant of the sphere $x^2 + y^2 + z^2 = a^2$.	CO6	L5	5M
	b	By changing order of integration, evaluate $\int_0^{4a}\int_{\frac{x^2}{4a}}^{2\sqrt{ax}} dydx$	CO6	L3	5M

***** END *****

O.P.Code: 23HS0803	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. I Year I Semester Supplementary Examinations August-2025

ENGINEERING CHEMISTRY

(Common to CE & ME)

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

PART-A

(Answer all the Questions **10×2=20** Marks)

1	a	What are scales and sludges?	CO1	L1	2M
	b	Define soft water and hard water.	CO1	L1	2M
	c	What is electroplating?	CO2	L1	2M
	d	Differentiate dry corrosion and wet corrosion.	CO2	L2	2M
	e	How to prepare Nylon-6,6 polymer?	CO3	L1	2M
	f	Define cetane number.	CO4	L1	2M
	g	What is saponification?	CO5	L1	2M
	h	Define refractories.	CO5	L1	2M
	i	What are nanomaterials?	CO6	L1	2M
	j	Define stabilizing agent.	CO6	L1	2M

PART-B

(Answer all Five Units **5×10=50** Marks)

UNIT-I

2	a	Discuss briefly about the priming and foaming?	CO1	L2	5M
	b	Explain about desalination of brackish water by Reverse Osmosis.	CO1	L2	5M
		OR			
3		Explain with a neat sketch the various steps involved in Industrial Water Treatment.	CO1	L2	10M

UNIT-II

4	a	Discuss in detail about sacrificial anodic protection.	CO2	L2	5M
	b	Explain the process of Galvanic corrosion.	CO2	L2	5M
		OR			
5	a	Describe the working principle of Zinc-air battery.	CO2	L2	5M
	b	Explain electroplating of Nickel and Copper.	CO2	L2	5M

UNIT-III

6	a	Explain the mechanism of cationic addition polymerization.	CO3	L2	5M
	b	How to prepare Buna-S rubber? Mention its applications.	CO3	L2	5M
		OR			
7	a	Explain the Proximate analysis of coal with its significance.	CO4	L2	5M
	b	What is significance of the Fuels for IC Engines?	CO4	L1	5M

UNIT-IV

8	a	Explain factors affecting the refractory materials.	CO5	L2	5M
	b	Discuss the properties of composite materials.	CO5	L2	5M
		OR			
9		Explain in detailed about manufacture of Portland Cement.	CO5	L2	10M

UNIT-V

10	a	Explain about the stabilization of colloids by Solid-Liquid Interface.	CO6	L2	5M
	b	Discuss the synthesis of colloids by Bragg's method.	CO6	L2	5M
		OR			
11		Summarize the applications of nanomaterials.	CO6	L2	10M

***** END *****

O.P.Code: 23HS0801	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. I Year I Semester Supplementary Examinations August-2025

CHEMISTRY

(Common to CSM, CIC, CAD, CCC & CAI)

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

PART-A

(Answer all the Questions **10 x 2 = 20** Marks)

1	a	Write Schrodinger wave equation.	CO1	L1	2M
	b	What is HOMO and LUMO.	CO1	L1	2M
	c	Define Super capacitor.	CO2	L1	2M
	d	Define Intrinsic and Extrinsic Semiconductor.	CO2	L1	2M
	e	What is secondary battery.	CO3	L1	2M
	f	Define Oxidation and Reduction.	CO3	L1	2M
	g	What is Polymer.	CO5	L1	2M
	h	What is Biodegradable polymer.	CO5	L1	2M
	i	Define Electromagnetic radiation.	CO6	L1	2M
	j	Define Chromatography.	CO6	L1	2M

PART-B

(Answer all Five Units **5 x 10 = 50** Marks)

UNIT-I

2		Calculate the bond order of F2 & NO molecule and explain the magnetic properties based on MOT theory.	CO1	L3	10M
		OR			
3	a	Sketch the molecular orbital diagram for Oxygen (O2). Explain its bond order and magnetic property based on MOT theory.	CO1	L3	5M
	b	Explain π- molecular orbital of 1, 3- Butadiene with a neat sketch.	CO1	L3	5M

UNIT-II

4	a	Draw the band diagrams for conductors, semi-conductors and Insulators.	CO2	L2	5M
	b	Write a note on applications of fullerenes.	CO2	L1	5M
		OR			
5	a	Write a short note on classification and properties of Fullerenes.	CO2	L1	5M
	b	Explain the applications of nano materials.	CO2	L2	5M

UNIT-III

6		Derive the Nernst equation for a single electrode potential and explain the terms in equation and write its applications.	CO3	L2	10M
		OR			
7	a	Discuss about potentiometric sensors with examples.	CO4	L2	6M
	b	Explain amperometric sensors with examples.	CO4	L2	4M

UNIT-IV

8	a	What is functionality of monomer? Explain in detail	CO5	L2	6M
	b	Write about Co-ordination or Ziegler-Natta polymerization.	CO5	L2	4M
		OR			
9	a	Describe the preparation, properties and uses of Bakelite.	CO5	L2	5M
	b	Write about synthesis, properties and applications of Poly Glycolic Acid.	CO5	L2	5M

UNIT-V

10	a	Explain various classifications of Chromatographic technique.	CO6	L2	5M
	b	Discuss the principle and applications of IR Spectroscopy.	CO6	L2	5M
		OR			
11	a	Sketch the Instrumentation of UV-Visible spectroscopy and explain its components.	CO6	L2	6M
	b	Write about the important applications of HPLC Chromatography.	CO6	L2	4M

***** END *****

O.P.Code: 23ME0302	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. I Year I Semester Supplementary Examinations August-2025
ENGINEERING GRAPHICS
(Common to CSE, CSIT,ECE & EEE)

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

(Answer all the Questions **5 x 14 = 70** Marks)

UNIT-I

1	Construct an ellipse, with distance of the focus from the directrix as 50 mm and eccentricity as 2/3. Also draw normal and tangent to the curve at a point 40 mm from the directrix.	CO1	L6	14M
	OR			
2	Construct a hypo cycloid of a circle of 50 mm diameter, which rolls inside another circle of 180 mm diameter for one revolution counterclockwise.	CO1	L6	14M

UNIT-II

3	Draw the projections of the following points, keeping the distance between the projectors as 25mm on the same reference lines. A – 20mm above HP and 30mm in front of VP B – 20mm above HP and 30mm behind VP C – 20mm below HP and 30mm behind VP D – 20mm below HP and 30mm in front of VP E – On HP and 30mm in front of VP F – On VP and 20mm above HP G – Lying on both HP and VP	CO2	L1	14M
	OR			
4	A line NS 80mm long has its end N 10mm above HP and 15mm In front of VP. The other end S is 65mm above HP and 50mm in front of VP. Draw the projections of the line and Find its true inclinations with HP & VP.	CO2	L3	14M

UNIT-III

5	Draw the projections of a hexagonal prism of base side 25mm and axis 60mm long, when it is resting on one of its corners of the base on H.P. The axis of the solid is inclined at 450 to H.P.	CO3	L6	14M
	OR			
6	A triangular prism of base side 30mm and axis 50mm long, is resting on H.P on one of its bases i) perpendicular to V.P ii) inclined 300 to V.P. Draw its projections.	CO3	L6	14M

UNIT-IV

7	A square pyramid of base 40 mm and axis 60 mm long, Its base lies on VP with its axis parallel to HP. A cut sectional plane, 600 to VP and bisect the axis. Draw the projections sectional front view and true shape of the section.	CO4	L6	14M
	OR			

O.P.Code: 23CE0101	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. I Year I Semester Supplementary Examinations August-2025
BASIC CIVIL & MECHANICAL ENGINEERING
(Common to CE, MECH, CSM, CIC, CAD, CCC & CAI)

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

***Note:** Answer **PART-A** from pages **2 to 20** and **PART-B** from **21 to 39.**

PART-A (CIVIL)

(Answer all the Questions **5 x 1 = 5** Marks)

1	a	List out various sources of water?	CO1	L1	1M
	b	What is meant by traversing?	CO1	L1	1M
	c	What are the uses of contour mapping?	CO2	L1	1M
	d	State the functions of Air Transport.	CO2	L2	1M
	e	How impurities in water are classified?	CO3	L1	1M

(Answer all Three Units **3 x 10 = 30** Marks) (CIVIL)

UNIT-I

2	a	Write a detailed report on Building Construction.	CO1	L3	5M
	b	Describe about Hydraulic Engineering.	CO1	L2	5M
		OR			
3	a	List out grades of cement and their uses.	CO1	L3	5M
	b	What is cement concrete and what are the properties of cement concrete?	CO1	L1	5M

UNIT-II

4	a	Convert Whole Circle Bearing (WCB) into Reduced Bearing (RB) i) 20°30' ii) 132°30' iii) 256°00' iv) 345°0'	CO2	L4	5M
	b	Briefly explain the various methods of horizontal measurement.	CO2	L5	5M
		OR			
5	a	Calculate the back bearing from observed fore bearing for the following lines i) AB=55°34' ii) CD=159°53' iii) PQ=210°12' iv) RS=295°36'	CO2	L3	5M
	b	What are the uses of surveying?	CO2	L1	5M

UNIT-III

6	a	Explain briefly about how dams are classified according to material use.	CO3	L2	5M
	b	What do you mean by Rainwater harvesting? and write its advantages.	CO3	L3	5M
		OR			
7	a	Briefly discuss about different types of Harbour.	CO3	L6	6M
	b	Enumerate different stages of Hydrological cycle.	CO3	L3	4M

PART-B(MECHANICAL)

(Answer all the Questions **5 x 1 = 5** Marks)

1	f	How do you classify the metals?	CO1	L2	1M
	g	Write the applications of composite materials.	CO1	L1	1M
	h	How do you classify the heat engines?	CO2	L2	1M
	i	What is Hybrid Electric vehicle?	CO2	L1	1M
	j	How do you classify the power plants?	CO3	L2	1M

(Answer all Three Units **3 x 10 = 30** Marks) (MECHANICAL)

UNIT-IV

8	a	List out various properties of the metals.	CO1	L1	5M
	b	Distinguish between ferrous and Nonferrous materials	CO1	L2	5M

OR

9	a	List out various important applications of smart materials.	CO1	L2	5M
	b	Discuss about the important properties of Nonferrous metals	CO1	L2	5M

UNIT-V

10	a	Illustrate the functions of Additive manufacturing.	CO2	L2	5M
	b	Differentiate between traditional Manufacturing and smart manufacturing.	CO2	L2	5M

OR

11	a	Explain the working of simple vapour compression refrigeration System with a neat figure.	CO2	L1	5M
	b	Distinguish between SI engines and CI engines.	CO2	L1	5M

UNIT-VI

12		Illustrate the working of steam power plant with a neat sketch.	CO3	L2	10M

OR

13	a	Differentiate between Belt drives, chain drives and gear drives.	CO3	L1	6M
	b	What is the need of Robots in Industry?	CO3	L2	4M

***** END *****

O.P.Code: 23EE0201	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. I Year I Semester Supplementary Examinations August-2025
BASIC ELECTRICAL & ELECTRONICS ENGINEERING
(Common to CSE, ECE, EEE & CSIT)

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

***Note:** Answer **PART-A** from pages **2 to 20** and **PART-B** from **21 to 39.**

PART-A (ELECTRICAL)

(Answer all the Questions **5 x 1 = 5** Marks)

1	a	What are the passive elements?	CO1	L1	1M
	b	State Kirchoff's laws.	CO1	L1	1M
	c	Define Faradays law	CO2	L1	1M
	d	What is the power rating of Air Conditioner and Fan?	CO3	L1	1M
	e	Define unit of Electrical Energy.	CO3	L1	1M

(Answer all Three Units 3 x 10 = 30 Marks) (ELECTRICAL)

UNIT-I

2	a	Find equivalent resistance when three resisters are connected in parallel.	CO2	L3	5M
	b	Explain about Energy Sources.	CO4	L2	5M

OR

3	a	What are the equations of AC Voltage and Current	CO2	L1	2M
	b	Define the following i)Waveform, ii) Time period, iii) frequency iv) Amplitude	CO2	L1	8M

UNIT-II

4		Draw and explain the construction of dc machine.	CO2	L4	10M

OR

5		Explain construction and operating principle of Permanent Magnet Moving Coil (PMMC) instruments.	CO2	L2	10M

UNIT-III

6		How does a nuclear plant work ? Explain with neat sketch.	CO3	L3	10M

OR

7		Explain the calculation of electricity bill for domestic consumers.	CO3	L2	10M

PART-B(ELECTRONICS)

(Answer all the Questions **5 x 1 = 5** Marks)

1	**f**	What are conductors?	**CO1**	**L1**	**1M**
	g	Define doping.	**CO1**	**L1**	**1M**
	h	Define amplifier.	**CO2**	**L1**	**1M**
	i	What is the necessary of the coupling capacitor?	**CO2**	**L1**	**1M**
	j	List the names of universal gates with symbols.	**CO3**	**L1**	**1M**

(Answer all Three Units 3 x 10 = 30 Marks) (ELECTRONICS)

UNIT-IV

8	Explain the operation of pn junction diode under forward bias and reverse bias conditions with the help of V-I characteristics curve.	**CO1**	**L5**	**10M**

OR

9	With a neat sketch Explain the input and output and current gain characteristics of a transistor in common base (CB) configuration.	**CO2**	**L1**	**10M**

UNIT-V

10	Explain the Block diagram description of a dc power supply with a detailed explanation of all blocks.	**CO2**	**L1**	**10M**

OR

11	What is a Voltage Regulator? How the Zener Diode works as a Voltage Regulator?	**CO2**	**L1**	**10M**

UNIT-VI

12		Explain about Logic gates with symbols and truth table.	**CO3**	**L5**	**10M**

OR

13	**a**	Explain differences between combinational and sequential circuits	**CO3**	**L4**	**6M**
	b	Perform the following addition using excess-3 code i)386+756 ii)12+38	**CO3**	**L4**	**4M**

***** END *****

Q.P.Code: 23CS0501 | R23 | H.T.No.

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech. I Year I Semester Supplementary Examinations August-2025
INTRODUCTION TO PROGRAMMING
(Common to All)

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

PART-A
(Answer all the Questions **10 x 2 = 200** Marks)

1	a	List the different flow chart symbols.	CO1	L1	2M
	b	What is meant by type conversion?	CO1	L1	2M
	c	State the syntax for nested if else statement.	CO2	L1	2M
	d	Describe the syntax of for Loop	CO2	L2	2M
	e	Define 2D array.	CO3	L1	2M
	f	List the different string handling function.	CO3	L1	2M
	g	Explain how to assign an address to pointer variable.	CO4	L2	2M
	h	Differentiate structure and union.	CO6	L4	2M
	i	What is meant by function and list the different types of function.	CO5	L1	2M
	j	Define Call-by-reference.	CO5	L1	2M

PART-B
(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

2	a	Define algorithm. Explain the characteristics of an algorithm.	CO1	L1	5M
	b	Design an algorithm for finding an average of three numbers.	CO1	L3	5M
		OR			
3	a	State the difference between Time complexity and Space Complexity.	CO1	L4	5M
	b	Compose a C program for to perform all the arithmetic operations.	CO1	L6	5M

UNIT-II

4	a	Develop a C Program to find whether the given number is even or odd	CO2	L6	5M
	b	Create a C Program to find the greatest of three numbers using nested if else statement.	CO2	L6	5M
		OR			
5	a	Describe the looping statements below with an example i. While Loop ii. Do-while loop iii. For loop.	CO2	L2	5M
	b	Compose a C program to print the following series 1 2 2 3 3 3 4 4 4 4	CO2	L6	5M

UNIT-III

6	a	Explain the Two-Dimensional array with example.	CO2	L2	5M
	b	Compose a C program for Transpose of a given matrix.	CO2	L6	5M
		OR			
7	a	Create a C program to count the vowels, consonants, special symbols and space in a given string.	CO3	L6	6M
	b	Create a C program to perform the following string library function strlen(), strcpy(), strcat(), strcmp().	CO3	L6	4M

UNIT-IV

8	a	Explain the concept of array of pointers with examples	CO4	L2	6M
	b	What are the features of pointers? Write a C program to print address of a variable.	CO4	L1	4M

OR

9	a	Illustrate the use of type def with suitable example.	CO4	L2	5M
	b	Explain about Enumerated data type.	CO4	L2	5M

UNIT-V

10	a	Explain the library functions available in C.	CO5	L2	5M
	b	Discuss in detail how communication is established among functions in C language?	CO5	L2	5M

OR

11	a	List the different file operations in C with their definition and syntax.	CO6	L1	5M
	b	Explain, read () and write () operation with examples.	CO6	L2	5M

***** END *****