	L	Hall Ticket Number :   R-1	9		
		I B.Tech. I Semester Supplementary Examinations December 2022		1	
		Engineering Graphics-I			
		(Common to CE & ME)			
		Max. Marks: 70 Answer any five full questions by choosing one question from each unit (5x14 = 70 N ********			
		UNIT–I	Marks	со	BL
1.		Construct an ellipse, when the distance of the focus from the directrix is equal to			
		65mm and eccentricity is 2/3. Also draw tangent and normal to the curve at a point			
		40mm from the directrix.	14M	1	6
0		OR			
2.		Construct a parabola, when the distance of the focus from the directrix is 50mm. Also draw tangent on normal to the curve at a point 35mm from the directrix.	14M	1	6
				1	0
3.		Construct a cycloid having a rolling circle diameter as 50mm. Draw a normal and a			
		tangent to a curve at a point 35mm above the base line.	14M	2	6
		OR			
4.		Draw a hypocycloid of a circle of 40mm diameter, which rolls inside another circle of			
		160mm diameter, for one revolution counter clockwise. Draw a tangent & a normal to it at a point 65mm from the center of the directing circle.	14M	2	3
				-	0
5.	a)	A point is 50mm from both the reference planes. Draw its projections in all possible			
		positions.	7M	3	3
	b)	A point A is 25mm above the H.P & 35mm in front of the V.P. Another point is 40mm			
		behind the V.P. & 30mm below the H.P. Draw the projections of these points taking	7M	3	3
		the distance between the end projectors as 70mm. OR	7 101	3	3
6.		The front view of a 75mm long line measures 55mm. The line is parallel to the H.P.			
		and one of its end is in the V.P and 25mm above the H.P. Draw the projections of the			
		line and determines its inclination with the V.P.	14M	3	3
_		UNIT-IV			
7.		A square ABCD of 40mm side has a corner on the HP and 20mm in front of the VP. All the sides of the squares are equally inclined to the HP and parallel to the VP. Draw			
		its projections.	14M	4	3
		OR		-	
8.		Draw the projections of a regular hexagon of 25mm side, having one of its sides in the			
		HP and inclined at 60° to the VP and its surface making an angle of 45° with the HP.	14M	4	3
•		UNIT-V			
9.		Draw the projections of a hexagonal prism of base 25mm side and axis 60mm long, when it is resting on one of its corners of the base on HP. The axis of the solid is			
		inclined at 45° to the HP.	14M	5	3
		OR		-	-
10.		A hexagonal pyramid side of base 25mm and axis 50mm longs, rests with one of the			
		corners of its base on HP, its axis is inclined at 30° to HP and 45° to VP. Draw its		-	~
		projections.	14M	5	3

Code: 19ASTIT       R-19         I B.Tech. I Semester Supplementary Examinations December 2022       Problem Solving and C Programming (Common to All Branches)         Max. Marks: 70       Irme: 3 Hours         Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)       Irme: 3 Hours         I a)       What are identifiers? What are the rules for declaring identifiers? Give example.       BM         b)       What is constant? Describe its classification with example       BM         I a)       What is flowchart? Describe various symbols used in flowcharts and draw flowchart for reversing the digits of a given number.       IMIT-II         3. a)       Explain various iterative statements available in C language with examples.       BM         b)       Write a program to find out whether the given number is Armstrong or not?       GM         cunt       OR       OR       A         a)       What are the limitations of switch () case statement?       7M         b)       Write a program to calculate bill of a job work done as follows. Use if else statement.       FM         i.       Rate of typing 3 Rs. / page.       7M         b)       What is mean by recursion? Explain the purpose of recursive function.       5M         oR       OR       OR       M         cunt       OR       14M       14M			Hall Ticket Number :			
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	L	Code: 19AC11T	R-19		
		I B.Tech. I Semester Supplementary Examinations December <b>Algebra and Calculus</b> (Common to All Branches)	2022 ne: 3 Hour	ſS	
		Answer any five full questions by choosing one question from each unit (5x14	= 70 Marks	)	
4		UNIT-I	Marks	со	BL
1.		Solve the system of equations x + 3y + 2z = 0, 2x - y + 3z = 0, 3x - 5y + 4z = 0, x + 17y + 4z = 0 OR	14M	1	3
2.		Find the rank of $A = \begin{bmatrix} 1 & 2 & 3 & 4 \\ -2 & -3 & 1 & 2 \\ -3 & -4 & 5 & 8 \\ 1 & 3 & 10 & 14 \end{bmatrix}$	14M	1	3
3.		Verify Cayley-Hamilton theorem for the matrix $A = \begin{bmatrix} 1 & 2 & -1 \\ 2 & 1 & -2 \\ 2 & -2 & 1 \end{bmatrix}$ and hence find	$A^{-1}$		
		using Cayley-Hamilton theorem.	14M	2	2
4.		Diagonalize the matrix A= $\begin{bmatrix} 1 & 1 & 1 \\ 0 & 2 & 1 \\ -4 & 4 & 3 \end{bmatrix}$ UNIT–III	14M	2	2
5.	a)	Find the first and second partial derivatives of $z = x^3 + y^3 - 3axy$	7M	3	3
	b)	If $z = f(x+ct) + g(x-ct)$ then prove that $\frac{\partial^2 z}{\partial t^2} = c^2 \frac{\partial^2 z}{\partial x^2}$ OR	7M	3	2
6.		Find the maximum and minimum values of $x^3 + y^3 - 3axy$	14M	3	3
		UNIT–IV			
7.	a)	Expand $\log_e x$ in powers of $(x-1)$	7M	4	3
	b)	Using Maclaurin's series , expand $\sin x$ in powers of $x$ . OR	7M	4	3
8.		Trace the curve $y^2(a-x) = x^2(a+x)$	14M	4	4
9.		Evaluate $\int_{0}^{4a} \int_{x^2/4a}^{2\sqrt{ax}} dy dx$ by changing the order of integration. OR	14M	5	3
10.		Evaluate $\int_{0}^{t/2} \sin^2 u \cos^4 u du$	14M	5	3

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	С	ode: 19AC13T		/	
		I B.Tech. I Semester Supplementary Examinations Nov/Dec	c 2022		
		Chemistry of Materials			
	,	(Common to CE & ME) Max. Marks: 70	Time: 3	Hours	
		Answer any five full questions by choosing one question from each unit (5x)			
			Marks	со	Blooms Level
		UNIT–I			
1.	a)	Write short notes on scales and sludge	7M	CO1	L2
	b)	Define priming and foaming and how can they be prevented	7M	CO1	L1
		OR			
2.	a)	Explain the formation and preventing methods of boiler troubles	7M	CO1	L1
	b)	Explain the principle involved in ion exchange process	7M	CO1	L2
2		UNIT-II			
3.		Define electrode potential. Derive the Nernst equation for single electrode potential.	14M	CO2	L1
		OR	1 1101	002	<b>_</b> '
4	a)	Discuss the measurement of single electrode potential	7M	CO2	L3
	с) b)	How many types of reference electrodes are there list out reference electrode		002	20
	2)	applications		CO2	L1
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5.	a)	Define corrosion and classify it with example	7M	CO3	L1
	b)	Distinguish between galvanizing and tinning	7M	CO3	L3
		OR			
6.	a)	Explain the mechanism of dry corrosion	7M	CO3	L3
	b)	Discuss the functions of paints and varnish on corrosion protection	7M	CO3	L2
		UNIT-IV			
7.	a)	Describe the preparation, properties and applications of PVC	7M	CO4	L2
	b)	Discuss the any alternate fuel in detail	7M	CO4	L1
	2)	OR		001	
8.		Explain the synthesis of propane fuel and summarize important applications			
0.		of it?	14M	CO4	L3
		UNIT–V			
9.	a)	What is meant by nanomaterial explain some important applications	7M	CO5	L1
	b)	Discuss any one synthetic methods of nanomaterials	7M	CO5	L2
		OR			
10.		Explain the surface analysis of nanomaterials		CO5	L2
	b)	Describe the chemical synthesis of nanomaterials with example	7M	CO5	L2
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