ŀ	Hall Ticket Number :			
C	ode: 19AC11T	R-19		
	I B.Tech. I Semester Supplementary Examinations March/April 2	023		
	Algebra and Calculus			
	(Common to All Branches)			
	Max. Marks: 70 Answer any five full questions by choosing one question from each unit (5x14 = ***********************************	e: 3 Ho 70 Mar		
	UNIT-I	Marks	СО	BL
	Find the Eigen values and Eigen vectors of the matrix			
	$A = \begin{bmatrix} 6 & -2 & 2 \\ -2 & 3 & -1 \\ 2 & -1 & 3 \end{bmatrix}$			
	$A = \begin{vmatrix} -2 & 3 & -1 \end{vmatrix}$			
	$\begin{bmatrix} 2 & -1 & 3 \end{bmatrix}$	14M	CO1	13
	OR		00.	
	Prove that the following set of equations are consistent and solve them			
	3x + 3y + 2z = 1, $x + 2y = 4$, $10y + 3z = -2$, $2x - 3y - z = 5$	14M	CO1	L3
	UNIT-II			
	$\begin{bmatrix} 8 & -8 & -2 \end{bmatrix}$			
	Diagonalize the matrix A= $\begin{bmatrix} 8 & -8 & -2 \\ 4 & -3 & -2 \\ 3 & -4 & 1 \end{bmatrix}$			
	$\begin{vmatrix} 3 & -4 & 1 \end{vmatrix}$	4 4 5 4	CO2	1.0
	OR	14101	CO2	L2
	Reduce the quadratic form $3x^2 + 5y^2 + 3z^2 - 2xy - 2yz + 2zx$ to canonical form			
	by using orthogonal transformation.	14M	CO2	13
	UNIT-III	I TIVI	002	LO
a)	If $z = u^2 + v^2$ and $u = at^2$, $v = 2at$, then find $\frac{dz}{dt}$	7M	CO3	13
		7 101	000	LO
b)	Evaluate $\frac{\partial z}{\partial x}$ and $\frac{\partial z}{\partial y}$, if $z = \log(x^2 + y^2)$	71.4	CO2	ΙO
	OR	/ IVI	CO3	L3
	A rectangular box open at the top is to have volume of 32 cubic ft. Find the			
	dimensions of the box requiring least material for its construction.	14M	CO3	L3
	UNIT-IV			
	Trace the curve $a^2y^2 = x^2(a^2 - x^2)$	1 4 1 1	CO4	1.4
	OR	14101	CO4	L4
	Using Taylor's theorem, express the polynomial $2x^3 + 7x^2 + x - 6$ in powers of			
	($x-1$).	14M	CO4	13
	UNIT-V	1-1111	004	LO
	Evaluate $\int_{0.0}^{1} \int_{0.0}^{1} \frac{dxdy}{\sqrt{(1-x^2)(1-y^2)}}$			
	$\int_{0}^{1} \int_{0}^{1} \sqrt{(1-x^2)(1-y^2)}$	14M	CO5	L3
	OR		200	_0
	Evaluate $\int_{0}^{a} \int_{0}^{\sqrt{a^2-x^2}} y \sqrt{x^2+y^2} dxdy$ by changing into polar coordinates.	4 45 -	00-	
	0 0	14M	CO5	L3

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Hall Ticket Number :]	R-19
Code: 19AC13T							K-17

I B.Tech. I Semester Supplementary Examinations March/April 2023

Chemistry of Materials (Common to CE & ME)

		(Common to CE & ME)			
	١	Max. Marks: 70 Time	: 3 Ho	urs	
	P	Answer any five full questions by choosing one question from each unit $(5x14 = 7)$	0 Marl	ks)	
		<u> </u>	Marks	СО	BL
		UNIT-I			
1.		Differentiate between Bureau of Indian Standards (BIS) and World health			
		organization(WHO) standards of drinking water	14M	CO1	L2
		OR			
2.	a)	Define cation exchanger and anion exchanger with neat diagram	7M	CO1	L4
	b)	List out standard specifications for drinking water	7M	CO1	L1
		UNIT-II			
3.	a)	Explain the working principle and construction of hydrogen electrode	7M	CO2	L2
	b)	Draw the structure of calomel electrode and explain the working principle of it?	7M	CO2	L4
		OR			
4.	a)	Explain any five applications of solar cells	7M	CO2	L1
	b)	What is mean by photovoltaic cell? How it works?	7M	CO2	L2
	,				
		UNIT-III			
5.		Define dry corrosion and explain mechanism of oxidation corrosion with example	14M	CO3	L3
		OR			
6.		Define electrochemical corrosion? Explain the mechanism of electrochemical corrosion	14	CO3	L3
٥.			• •	000	_0
		UNIT-IV			
7.	a)	Differentiate thermosetting and thermoplastic polymers	7M	CO4	L3
	b)	Define polymer with example and classify it	7M	CO4	L1
	٥,	OR	7 1 1 1	001	-'
8.		Define biofuel? Explain the preparations of ethanol fuel and summarize			
0.		important applications of it?	14M	CO4	L3
		UNIT-V			
9.	a)	Discuss the working principle of TEM with neat diagram	7M	CO5	L3
	b)	List out the applications of SEM		CO5	L1
	- /	OR			
10.		Define reverse micellar method? Explain the synthesis of nanomaterial by using			
		reverse micellar method	14M	CO5	L1

Hall Lic	ket Number :										Г				
Code: 1	9A311T	<u> </u>										F	2-19		
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							7						Marks	СО	BL
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	•			ı is	place	ed w					d su	ırface	14M	CO4	L3
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Two pegs fixed on a wall a measured parallel to the floothe height of the second peg with the floor. A line AB, 50mm long, has its at 30° to the H.P and at 45° to A hexagonal plate of side 3 inclined at 45° to VP and perpose in the front view, having long. Draw its top view when the projections of a company the projections of a company the projections of a cyling when it is resting on HP on its by Draw the projections of a pending the projections of a pe	Code: 19A311T I B.Tech. I Semester Supple Enging (Common Marks: 70 Answer any five full questions by chaster and eccentricity is 3/2. Also point 45mm from directrix. The major and minor axes of an eleby Oblong method. Show by means of a drawing where of the generating circle, the hypocomorphic that involute of a circle of 40m to the curve at a point 95mm from the curve at a point 95mm from the the floor is 3 the height of the second peg and the with the floor. 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A hexagonal plate of side 30mm is inclined at 45° to VP and perpendicular. A circular plate of negligible thickness ellipse in the front view, having its major long. Draw its top view when the major long. Draw the projections of a cone of bas when it is resting on HP on its base. Draw the projections of a pentagonal power is the projections of a pentagonal place.	Code: 19A311T I B.Tech. I Semester Supplemento Engineering (Common Max. Marks: 70 Answer any five full questions by choosing on the semester and the distance of the semester is a seminary five full questions by choosing on the distance of the distance of the distance of the major and minor axes of an ellipse are by Oblong method. UNIT The major and minor axes of an ellipse are by Oblong method. UNIT Show by means of a drawing when the diam of the generating circle, the hypocycloid is the generating circle equal to 60mm. OF Draw the involute of a circle of 40mm diame to the curve at a point 95mm from the center UNIT Two pegs fixed on a wall are 4.5m apar measured parallel to the floor is 3.6m. If or the height of the second peg and the inclination with the floor. OF A line AB, 50mm long, has its ends A in both at 30° to the H.P and at 45° to the V.P. Draw UNIT A hexagonal plate of side 30mm is place inclined at 45° to VP and perpendicular to H OF A circular plate of negligible thickness are ellipse in the front view, having its major ax long. Draw its top view when the major axis unit is resting on HP on its base. Draw the projections of a cone of base 30 when it is resting on HP on its base. OF Draw the projections of a pentagonal pyram having base on the ground and one of edges.	Code: 19A311T I B.Tech. I Semester Supplementary E Engineering Gr (Common to C Max. Marks: 70 Answer any five full questions by choosing one q ************************************	Code: 19A311T I B.Tech. I Semester Supplementary Exam Engineering Graph (Common to CE & I) Max. Marks: 70 Answer any five full questions by choosing one questions of a cylinder of base 30mm diare when it is resting on HP on its base. OR The major and minor axes of an ellipse are 120mm as by Oblong method. UNIT-II Show by means of a drawing when the diameter of the office of the generating circle, the hypocycloid is a straight the generating circle equal to 60mm. OR Draw the involute of a circle of 40mm diameter. Also to the curve at a point 95mm from the center of the circular plate of the second peg and the inclination of the with the floor. OR A line AB, 50mm long, has its ends A in both the H.F. at 30° to the H.P and at 45° to the V.P. Draw the projections of a cone of base 30mm diameter of the flore. OR A circular plate of negligible thickness and 50mm ellipse in the front view, having its major axis 50mm long. Draw its top view when the major axis of the ellipse in the front view, having its major axis 50mm diameter of the projections of a cone of base 30mm diameter. Also of the projections of a cylinder of base 30mm diameter. Also of the projections of a cylinder of base 30mm diameter. Also of the projections of a pentagonal pyramid axis 60 having base on the ground and one of edges of base	Code: 19A311T I B.Tech. I Semester Supplementary Examina Engineering Graphics (Common to CE & ME) Max. Marks: 70 Answer any five full questions by choosing one question free treatment of the focus of the focus of the focus of the focus of the major and minor axes of an ellipse are 120mm and 8 by Oblong method. UNIT-II Show by means of a drawing when the diameter of the role of the generating circle, the hypocycloid is a straight line. The generating circle equal to 60mm. OR Draw the involute of a circle of 40mm diameter. Also draw to the curve at a point 95mm from the center of the circle. UNIT-III Two pegs fixed on a wall are 4.5m apart. The distant measured parallel to the floor is 3.6m. If one peg is 1.5n the height of the second peg and the inclination of the line with the floor. OR A line AB, 50mm long, has its ends A in both the H.P and at 30° to the H.P and at 45° to the V.P. Draw the projection UNIT-IV A hexagonal plate of side 30mm is placed with a side inclined at 45° to VP and perpendicular to HP. Draw the projection or the front view, having its major axis 50mm long long. Draw its top view when the major axis of the ellipse is UNIT-V a) Draw the projections of a cone of base 30mm diameter when it is resting on HP on its base. OR Draw the projections of a cylinder of base 30mm diameter when it is resting on HP on its base. OR Draw the projections of a pentagonal pyramid axis 60mm having base on the ground and one of edges of base inclined inclin	Code: 19A311T I B.Tech. I Semester Supplementary Examinations Engineering Graphics-I (Common to CE & ME) Max. Marks: 70 Answer any five full questions by choosing one question from end to the focus from the following of the generating circle, the hypocycloid is a straight line. Take the generating circle equal to 60mm. OR Draw the involute of a circle of 40mm diameter. Also draw a taxe to the curve at a point 95mm from the center of the circle. UNIT-II Two pegs fixed on a wall are 4.5m apart. The distance be measured parallel to the floor is 3.6m. If one peg is 1.5m about the height of the second peg and the inclination of the line join with the floor. OR A line AB, 50mm long, has its ends A in both the H.P and the at 30° to the H.P and at 45° to the V.P. Draw the projections. UNIT-IV A hexagonal plate of side 30mm is placed with a side on inclined at 45° to VP and perpendicular to HP. Draw the projections. UNIT-V A circular plate of negligible thickness and 50mm diameter and when it is resting on HP on its base. Draw the projections of a cone of base 30mm diameter and when it is resting on HP on its base. OR Draw the projections of a pentagonal pyramid axis 60mm long, having base on the ground and one of edges of base inclined at 40 to the ground and one of edges of base inclined at 40 to the ground and one of edges of base inclined at 40 to the ground and one of edges of base inclined at 40 to the ground and one of edges of base inclined at 40 to the ground and one of edges of base inclined at 40 to the ground and one of edges of base inclined at 40 to the ground and one of edges of base inclined at 40 to the ground and one of edges of base inclined at 40 to the ground and one of edges of base inclined at 40 to the ground and one of edges of base inclined at 40 to the ground and one of edges of base inclined at 40 to the ground and one of edges of base inclined at 40	Code: 19A311T I B.Tech. I Semester Supplementary Examinations Marce Engineering Graphics-I (Common to CE & ME) Max. Marks: 70 Answer any five full questions by choosing one question from each unexamination and eccentricity is 3/2. Also draw tangent and normal to the common and eccentricity is 3/2. Also draw tangent and normal to the common and eccentricity is 3/2. Also draw tangent and normal to the common and eccentricity is 3/2. Also draw tangent and normal to the common and eccentricity is 3/2. Also draw tangent and normal to the common and eccentricity is 3/2. Also draw tangent and normal to the common and eccentricity is 3/2. Also draw tangent and 80mm. Draw by Oblong method. UNIT-II Show by means of a drawing when the diameter of the rolling circle is of the generating circle, the hypocycloid is a straight line. Take the did the generating circle equal to 60mm. OR Draw the involute of a circle of 40mm diameter. Also draw a tangent & to the curve at a point 95mm from the center of the circle. UNIT-III Two pegs fixed on a wall are 4.5m apart. The distance between measured parallel to the floor is 3.6m. If one peg is 1.5m above the the height of the second peg and the inclination of the line joining the with the floor. OR A line AB, 50mm long, has its ends A in both the H.P and the V.P. It at 30° to the H.P and at 45° to the V.P. Draw the projections. OR A circular plate of side 30mm is placed with a side on VP and inclined at 45° to VP and perpendicular to HP. Draw the projections. OR A circular plate of negligible thickness and 50mm diameter appearellipse in the front view, having its major axis 50mm long and minor a long. Draw its poview when the major axis 50mm long and minor a long. Draw its projections of a cone of base 30mm diameter and axis 50 when it is resting on HP on its base. Draw the projections of a cone of base 30mm diameter and axis 50 when it is resting on HP on its base. OR	Code: 19A311T I B.Tech. I Semester Supplementary Examinations March/A Engineering Graphics-I (Common to CE & ME) Max. Marks: 70 Answer any five full questions by choosing one question from each unit (5: ***********************************	Code: 19A311T I B.Tech. I Semester Supplementary Examinations March/April 20 Engineering Graphics-I (Common to CE & ME) Max. Marks: 70 Answer any five full questions by choosing one question from each unit (5x14 = 7 **********************************	R-19 Code: 19A311T I B.Tech. I Semester Supplementary Examinations March/April 2023 Engineering Graphics-I (Common to CE & ME) Max. Marks: 70 Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks) Marks UNIT-I Construct a hyperbola, when the distance of the focus from the directrix is 65mm and eccentricity is 3/2. Also draw tangent and normal to the curve as a point 45mm from directrix. OR The major and minor axes of an ellipse are 120mm and 80mm. Draw an ellipse by Oblong method. UNIT-II Show by means of a drawing when the diameter of the rolling circle is twice that of the generating circle, the hypocycloid is a straight line. Take the diameter of the generating circle equal to 60mm. OR Draw the involute of a circle of 40mm diameter. Also draw a tangent & a normal to the curve at a point 95mm from the center of the circle. 14M UNIT-III Two pegs fixed on a wall are 4.5m apart. The distance between the pegs measured parallel to the floor is 3.6m. If one peg is 1.5m above the floor, find the height of the second peg and the inclination of the line joining the two pegs, with the floor. OR A line AB, 50mm long, has its ends A in both the H.P and the V.P. It is inclined at 30° to the H.P and at 45° to the V.P. Draw the projections. UNIT-IV A hexagonal plate of side 30mm is placed with a side on VP and surface inclined at 45° to VP and perpendicular to HP. Draw the projections. OR A circular plate of negligible thickness and 50mm diameter appears as an ellipse in the front view, having its major axis 50mm long and minor axis 30mm long. Draw its top view when the major axis of the ellipse is horizontal. UNIT-V a) Draw the projections of a colinder of base 30mm diameter and axis 50mm long, when it is resting on HP on its base. OR Draw the projections of a pentagonal pyramid axis 60mm long, base 30mm side having base on the ground and one of edges of base inclined at 45° to VP.	Code: 19A311T IB.Tech. I Semester Supplementary Examinations March/April 2023 Engineering Graphics-I (Common to CE & ME) Max. Marks: 70 Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks) WINIT-I Construct a hyperbola, when the distance of the focus from the directrix is 65mm and eccentricity is 3/2. Also draw tangent and normal to the curve as a point 45mm from directrix. OR The major and minor axes of an ellipse are 120mm and 80mm. Draw an ellipse by Oblong method. UNIT-II Show by means of a drawing when the diameter of the rolling circle is twice that of the generating circle, the hypocycloid is a straight line. Take the diameter of the generating circle equal to 60mm. OR Draw the involute of a circle of 40mm diameter. Also draw a tangent & a normal to the curve at a point 95mm from the center of the circle. UNIT-III Two pegs fixed on a wall are 4.5m apart. The distance between the pegs measured parallel to the floor is 3.6m. If one peg is 1.5m above the floor, find the height of the second peg and the inclination of the line joining the two pegs, with the floor. OR A line AB, 50mm long, has its ends A in both the H.P and the V.P. It is inclined at 30° to the H.P and at 45° to the V.P. Draw the projections. UNIT-IV A hexagonal plate of side 30mm is placed with a side on VP and surface inclined at 45° to VP and perpendicular to HP. Draw the projections. UNIT-IV A hexagonal plate of negligible thickness and 50mm diameter appears as an ellipse in the front view, having its major axis 50mm long and minor axis 30mm long. Draw its top view when the major axis 50mm long and minor axis 30mm long, when it is resting on HP on its base. OR Draw the projections of a cone of base 30mm diameter and axis 50mm long, when it is resting on HP on its base. OR Draw the projections of a pentagonal pyramid axis 60mm long, base 30mm side having base on the ground and one of edges of base inclined at 45° to VP. 14M CO5

Hall Ticket Number :						
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Code: 19A511T

I B.Tech. I Semester Supplementary Examinations March/April 2023

Problem Solving and C Programming

		(Common to All Branches)							
		Max. Marks: 70 Time: 3 H							
	F	Answer any five full questions by choosing one question from each unit $(5x14 = 70 M)$	arks)						
			Marks						
	,	UNIT-I							
1.	a)	Define Algorithm. Explain the characteristics of algorithm.	6M						
	b)	What is meant by flow chart? Explain the symbols used in flowchart with an example.	8M						
	,	OR							
2.	a)	Explain the structure of C program with an example program.	7M						
	b)	Discuss about C data types.	7M						
	,	UNIT-II							
3.	a)	Explain conditional statements with an example.	8M						
	b)	Write a c program to find whether the given year is leap year or not.	6M						
		OR							
4.	a)	What is meant by searching? Explain binary search algorithm.	7M						
	b)	Write a c program to print array of elements in ascending order using selection sort.	7M						
		UNIT-III							
5.	a)	Define string. Explain declaration of string. Explain any three string handling functions with neat syntax and example.	8M						
	b)	Write C program to concatenate two strings without using strcat() function	6M						
		OR							
6.	a)	Explain the following key words with example. i) auto ii) register iii) static iv) extern.	8M						
	b)	Write a c program to illustrate functions with arguments and returning value.	6M						
		UNIT-IV							
7.	a)	Define pointer. Explain pointer arithmetic operations.	7M						
	b)	Explain call by reference with an example program.	7M						
		OR							
8.	a)	Explain dynamic memory allocation functions.	7M						
	b)	Write a C program to demonstrate array of pointers.	7M						
		UNIT-V							
9.	a)	Define structure and union. Explain the syntax and accessing elements from structure and union with an example.	8M						
	b)	Write a C program to maintain a record of n students with four fields (Roll no, name, marks and grade). Print the student details.	6M						
		OR							
10.	a)	Define file. Write a C program to write character to a file and reading character from file.	8M						
	b)) Discuss about file operations.							