Enrolment No.\_\_\_\_\_

## **GUJARAT TECHNOLOGICAL UNIVERSITY** ME - SEMESTER- II(Old course) • EXAMINATION (Remedial) – WINTER- 2015

Subject Code: 1720905		Code: 1720905 Date: 11/12/20	Date: 11/12/2015	
Sul Tir Inst	bject ne:2: ructio	Name: COMPUTER AIDED DESIGN 30 pm to 5:00 pm Total Marks: 7	70	
mst	1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	<b>(a)</b>	What is scan conversion? Explain Bresenhamøs algorithm for scan conversion of a circle.	07	
	(b)	List different types of cad software and explain minimum requirements in Computers for installing anyone with its capability.	07	
Q.2	(a) (b)	Write short note on (1) GKS (2) IGES (III) Communication Standards. Plot the hermite cubic curve having endpoints PO(1, 3) and P1(7, 2). The tangent vector for end PO is defined by a line joining PO and another point P2(10, 8), whereas the tangent vector for end P1 is defined by a line joining P1and another point P3(6,0). Also plot the curve in the same graph, if the point P3 is changed to (9,6) with the other things remaining the same. <b>OR</b>	07 07	
	(b)	Sketch and explain following with reference to solid modeling (1) sweep (2) primitive (3)Boolean operation.	07	
Q.3	(a)	Plot the Bezier curve having endpoints PO(0,0) and P3(7,0). The other control points are P1(7, 0) and P2(7,6). Plot for values for $u = 0, 0.1, 0.2, i$ 1, if the characteristic polygon is drawn in the sequence PO - P1 - P2 - P3.	07	
	<b>(b)</b>	Generate a straight line connecting two points (21, 11) and (26, 15) using Bresenhamøs line generating algorithm. OR	07	
Q.3	<b>(a)</b>	P(0,0), Q(2,2) & R(5,2) are the vertices of a triangle PQR which is to be rotated at angle of 45O about (a) the origin and (b) about a point $X(-2,-2)$ . Give transformed coordinates of P,Q and R for both the cases.	07	
	(b)	Reflect a diamond shape polygon whose vertices are A(-3,0), B(0,-2), C(3,0) and D(0,2) about the line $Y = X+4$ . Determine the final co-ordinate of the vertices.	07	
Q.4	(a) (b)	Discuss animation and simulation. Draw the surface model of a solid that simultaneously satisfies the following conditions: $x^{2} + y^{2} \ddot{O} z^{2}/4$	07 07	
		$z \le 9$		
04	(9)	OR Explain the concept of Feature based modeling	07	
Q.1	(a) (b)	Explain the method for generating an image on the screen.	07 07	
Q.5	<b>(a)</b>	Prove that the curvature of a circular cylinder is zero. What is the radius of	07	
	(b)	Explain clipping and windowing?	07	
05	(a)	<b>OR</b> What are twist vectors? Why are they needed as input if four boundary curves	07	
<b>Q</b> .J	(a)	are given for a bicubic surface?	U/	
	(b)	Explain different kinds of surfaces in detail.	<b>07</b> 1	