GUJARAT TECHNOLOGIC		Enrolment No	TECHNOLOGICAL UNIVERSITY  ew course)• REMEDIAL EXAMINATION – SUMMER 2015  Date:13/05/2015  M Systems  D pm  Total Marks: 70	
		Jame: CAD/CAM Systems 0:30 am to 1:00 pm Total Marks: 7		
	2.	Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a)	Explain the following with neat sketch: tabulated surface, ruled surface, Coons surface. Justify the need of Bezier and B-spline surfaces for modern design requirement.	07	
	(b)	Enlist various solid modeling schemes elaborating any three of them.	07	
Q.2	(a)	<ol> <li>Attempt any two:         <ol> <li>Illustrate technical specifications of a typical CAD workstation.</li> <li>Throw light on different areas of manufacturing that are now computer-aided or computer-assisted.</li> </ol> </li> <li>Using a block diagram clearly show the configuration of a graphics software.</li> </ol>	07	
	(b)	Explain the mathematics behind magnifying the triangle with vertices A (0, 0), B (1, 1) and C (5, 2) to twice its size while keeping the vertex C fixed.	07	
	(b)	A rectangle ABCD with A (10, 15), B (25, 15), C (25, 25) and D (10, 25) is to be reflected about a line passing through points P (25, 20) and Q (10, 30). Determine the vertices of the reflected rectangle.	07	
Q.3	(a)	Give your know-how about mathematical representation of curves with reference to following points: non-parametric (implicit and explicit) and parametric forms, reasons proving superiority of parametric form for usage in curve modeling.	07	
	(b)	What do you mean by curve fitting technique or curve interpolation? Deduce the equation of a Hermite cubic-spline curve in matrix form.	07	

**OR**Explain geometry and topology with regard to solid modeling. Write any

three advantages of solid modeling. Why is surface modeling still used

Discuss the important design functions done by a computer which makes it

inevitable for engineering design now-a-days.

Q.3

(a)

**(b)** 

sometimes?

**07** 

**07** 

Q.4 (a) Choose a modeling software of your choice, state the modeling technique 07 used and describe the procedure to make the solid model shown in Figure 1.

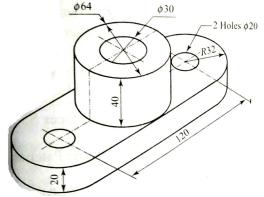


Figure 1

Differentiate between CSG and B-rep. **07 (b)** Explain the clear procedure for making a surface model of the object shown **Q.4 07** (a) in Figure 1. You may draw necessary sketches. Explain feature-based modeling technique. Which software uses this **07 (b)** technique? **Q.5** Give different applications of CAD in detail. **07** (a) Write a detailed note on NC machining. **07 (b)** OR **Q.5** (a) Describe about generative CAPP system using a block diagram. State a **07** situation where such a system would be preferred to a variant system. **(b)** Justify the concept of simultaneous engineering explaining potential barriers **07** for its implementation.

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