PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech., Summer 2017-18 Examination

Semester: 2   Date: 21/05/2018
Subject Code: 03217152   Time: 2:00 pm to 4:30 pm
Subject Name: Computer Aided Engineering Design   Total Marks: 60

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1	A) What do you mean by CAD? State reasons for implementing CAD.	**(05)**
	B) What do you mean by "Ortho" in Orthographic projection? Derive expression of top view of an orthographic projection.	**(05)**
	C) Enlist and explain co-ordinates systems used in FEM.	**(05)**
Q.2	**Answer the following questions**. (Attempt any three) (Each five mark)	**(15)**
	A) What is reverse engineering? Explain steps involved collecting point cloud data.	
	B) Explain mesh generation techniques.	
	C) Explain wire frame modeling with its types.	
	D) Explain pre-processing, solver, post-processing in FEM.	
Q.3	A) Explain Feature based Modeling & discuss different types of features.	**(07)**
	B) With a neat sketch explain Fused deposition modeling (FDM) of RP.	**(08)**

OR

	B) Triangle PQR with vertices P(2,5), Q (6,7), R(2,7) is to be reflected about line $2y = X+6$. Determine Concatenated transformation Matrix & coordinates of matrices for reflected triangle.	**(08)**
Q.4	A) Explain CSG technique of solid modeling and compare it with B-rep technique.	**(07)**

OR

	A) Explain the properties of normalized B-splines. State the differences between Bezier and B-spline curve.	**(07)**
	B) The coordinates of four control points relative to a current WCS are given by $P_0[3\ 3\ 0]$, $P_1[3\ 4\ 0]$, $P_2[4\ 4\ 0]$, $P_3[4\ 3\ 0]$. Find the equation of the resulting Bezier curve. Also find points on the curve for u=0, 0.25, 0.5, 0.75, 1.	**(08)**