

Code: MEMD2T5A

I M.Tech-II Semester-Regular Examinations-December 2013

**GEOMETRIC MODELING
(MACHINE DESIGN)**

Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. Find the new positions of a line $\begin{matrix} 2 & 3 \\ 4 & 6 \end{matrix}$ when the line is
- a) Translated 2 units in X & Y directions.
 - b) Scaled 3 units in both the directions.
 - c) Rotated 30 degrees about X-axis and next 45 degrees about Y-axis. 14M
2. What are the blending functions? How are they represented in the curve definitions? 14M
3. What are the composite PC curves? Explain its significance in geometric modeling? 14M
4. Discuss the derivatives of Bezier curves. 14M

5. Evaluate the B-spline basis functions for a second degree curve with four control points. 14M
6. Explain various types of surfaces defined in geometric modeling. 14M
7. What is meant by tricubic solid? Explain with an example. 14M
8. How is wire frame model different from boundary representation? Discuss the merits and demerits of them with suitable examples. 14M