

Code: MEMD2T5A

I M.Tech - II Semester - Regular Examinations - August 2014

**GEOMETRIC MODELLING
(MACHINE DESIGN)**

Duration: 3 hours

Marks: 5x14=70

Answer any FIVE questions. All questions carry equal marks

1. Explain the use of explicit equations for geometric modeling with examples. 14 M
2. What are the cubic splines? Explain blending functions with respect to cubic splines. 14 M
3. Explain the parametric representation of the following surfaces 14 M
 - a) Hermit-Bi-Cubic Surface
 - b) Coons Surface
4. State the properties of a Bezier curve and explain its limitations. Prove that the Bernstein polynomials satisfy the partition unity property. 14 M
5. Discuss and explain the various derivatives of B-spline curves 14 M

6. Explain various types of surfaces used in geometric modeling
14 M
7. Explain the algebraic and geometric form of a tricubic solid.
14 M
8. Explain the following solid modeling schemes in detail
- a) Half space and 7 M
 - b) Cell decomposition 7 M