Code: **MEMD2T5A**

I M.Tech - II Semester - Regular Examinations – AUGUST 2016

GEOMETRIC MODELING
(MACHINE DESIGN)

Duration: 3 hours   Max. Marks: 70

Answer any FIVE questions.   All questions carry equal marks

1. What do you mean by Transformation? Explain Transformations of geometric models.   14 M

2. Define and describe the Cubic spline quoting the drawbacks of them.   14 M

3. Find the equation of a Bezier curve which is defined by the four points as $P_0(2,2,0)$, $P_1(2,3,0)$, $P_2(3,3,0)$ and $P_3(3,2,0)$ and also find the points on the curve for $u = 0$, $u = ¼$, $u = 1/2$, $u = ¾$ and $u = 1$.   14 M

4. Discuss the B-spline curves with listing their properties and derivatives.   14 M

5. Write the parametric equations for the ruled surface, surface of revolution and Tabulated cylinders.   14 M

6. What are the advantages of parametric programming in designing surfaces? Explain clearly.   14 M

7. Explain in detail the solid modeling methods: Spatial Cell and Cell decomposition.   14 M

8. Derive the algebraic form of a Tri-cubic solid.   14 M