

Code No: C1511**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH I - SEMESTER EXAMINATIONS, APRIL/MAY-2012
ADVANCED COMPUTER AIDED DESIGN****(MACHINE DESIGN)****Time: 3hours****Max. Marks: 60****Answer any five questions
All questions carry equal marks**

- - -

- 1.a) Define CAD and discuss the criteria adopted for evaluating CAD/CAM systems.
- b) Distinguish between synthetic and analytical curves and mention the characteristics of Bezier curve.

- 2.a) Briefly describe about tabulated surface
- b) Generate the surface having four sides with parameters u and v if $x = 3u + v$ and $y = 2u + 3v + uv$ with boundaries specified as follows:
 $u = 0; 0 \leq v \leq 1$ $v = 0; 0 \leq u \leq 1$
 $u = 1; 0 \leq v \leq 1$ $v = 1; 0 \leq u \leq 1$.

- 3.a) Given the four corners $P_0 (1,1)$, $P_1 (3,1)$, $P_2 (3,3)$ and $P_3 (4,2)$, find the equation of the bi-cubic surface.
- b) Discuss the characteristics of **B**-Spline surface

- 4.a) What is meant by B-Representation? Explain it with an example.
- b) Discuss about different types of data exchange formats used in CAD systems.

- 5.a) Discuss the function of Preprocessor and Postprocessor in FEM software.
- b) Discuss the relationship between tolerance and manufacturing cost.

- 6.a) List various types of output devices and explain about any two of them with neat diagrams
- b) Briefly explain various types of surface manipulation techniques.

- 7.a) Find out the transformed coordinates of position vector $(3,2,1,1)$ subjected to the following successive transformations
i) Translation by $(-1, -1, -1)$ and
ii) 30° clockwise about x-axis.
- b) What is meant by collaborative engineering? Explain its significance.

8. Write short notes on the following
 - a) COON's Surface
 - b) STEP architecture
 - c) Wire frame modeling.