R09

Code No: C3308, C5208

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH I - SEMESTER EXAMINATIONS, APRIL/MAY-2012
ADVANCED CAD
(COMMON TO ADVANCED MANUFACTURING SYSTEMS, DESIGN FOR MANUFACTURIN)

Time: 3hours **Max. Marks: 60**

Answer any five questions
All questions carry equal marks

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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) 30^0 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.

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