

**M. TECH.-I (MECHANICAL CAD/CAM) (CBCS – 2015 COURSE) :
WINTER - 2017**

SUBJECT : COMPUTER AIDED DESIGN

Day : **Monday** Time : **11.00 AM TO 02.00 PM**
Date : **15/01/2018** **W-2017-2788** Max. Marks : 60

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in the **SEPARATE** answer books.
- 4) Draw neat and labeled diagram **WHEREVER** necessary
- 5) Assume suitable data, if necessary.

SECTION - I

Q.1 Write short note on wire frame modeling. Explain wire frame entities in detail. (10)

OR

The coordinates of four control points relative to a current working coordinate system are given as: (10)

$P_0 [3 \ 4 \ 0]^T$ $P_1 [3 \ 4 \ 0]^T$ $P_2 [4 \ 4 \ 0]^T$ and $P_3 [4 \ 3 \ 0]^T$. Find the equation of the resulting Bezier curve. Also find points on the curve for

$u = 0, \frac{1}{4}, \frac{1}{2}, \frac{3}{4}$ and 1.

Q.2 Explain parametric representation of analytical surfaces as; (10)

- a) Ruled surface
- b) Surface of revolution

OR

With a case study explain how one can find the minimum distance between a point in space and a plane surface. (10)

Q.3 Explain in detail Hermite Bicubic surface. Differentiate between Beizer surface and B-spline surface. (10)

OR

Write short note on surface Manipulation Techniques: (10)

- a) Evaluating points and curves on surfaces
- b) Trimming
- c) Intersection

SECTION - II

Q.4 Write short note on solid representation. Solid entities. (10)

OR

Explain various Data Exchange Formats. Explain any two of them in detail. (10)

Q.5 Write a note on: (10)

- a) Tolerance specification
- b) Tolerance analysis
- c) Tolerance synthesis

OR

Explain various modeling techniques. Explain any two of them in detail. (10)

Q.6 Explain the concept of collaborative design with a case study. (10)

OR

How product data management will help the designer in initial phase of design explain with a case study. (10)

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