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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

First Semester, M. Tech. - Mechanical Engineering (MCIM)

Semester End Examination; Jan - 2017

Computer Applications in Design

Time: 3 hrs *Max. Marks: 100*

***Note**: i) Answer **FIVE** full questions, selecting **ONE** full question from each unit.*
ii) Assume missing data, if any.

UNIT - I

1 a. Enumerate various stages of computer aided design. Explain role of each one of them. 10

b. Distinguish between Data and Database. 4

c. What are WCS, MCS and SCS? Give their uses. 6

2 a. Write the schematic representations of any three networks. Give the advantages of Bus Network. 10

b. Write functions of each of the modules of a CAD software. 10

UNIT - II

3a. What is Data-structure? Give an illustration. 10

b. A line in 2D space has its end points at (1, 1) and (1, 3). It is desired to move this line so as to locate the ends at (2, 1) and (4, 1). Describe the sequence of transformation required. Write the respective transformation matrices. 10

4 a. Discuss DDA for raster scanning of a straight line. Write the flow chart. 10

b. A straight line is defined by its end points (0, 0) and (2, 3). Do the following 2D transformation :

i) Rotate the line by an angle 30º clockwise 10

ii) Translate the original line by 2 units in *X* and 3 units in *Y* direction.

Write the transformed lines on a graph.

UNIT - III

5 a. Write classification of surfaces. Give examples. 10

b. Explain DMIS. Mention its applications. 10

6 a. List modeling facilities. Explain them briefly. 10

b. Explain DXF. Give its use. 10

UNIT - IV

7 a. Write a parametric representation of ellips. 4

b. Distinguish between Interpolation and Best fit methods. 8

c. Differentiate between a Tabulated cylinder and Ruled surface. 8

Contd….2

8 a.	What are NURBS? Give its important properties.	10
b.	What is synthetic curve? Describe the continuity requirements.	4
c.	Describe different methods of manipulation of surfaces.	6

UNIT - V

9 a.	List important features of B-Rep.	10
b.	Explain the use of location graph for representing assembly.	10
10 a.	Explain concept of solid representation using graph primitives.	8
b.	Explain the use of Precedence diagram for Assembly sequence analysis. Give an illustration.	12

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