



U.S.N

--	--	--	--	--	--	--	--	--	--

## 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/Feb. - 2016

Computer Applications in Design

Time: 3 hrs

Max. Marks: 100

*Note: Answer FIVE full questions, selecting ONE full question from each unit.*

### UNIT - I

- 1 a. Discuss the role of computers in the stage of design process. 10
- b. Explain how the color raster display works. 10
- 2 a. Explain the types of co-ordinate system used in graphics system. 10
- b. Discuss the software modules of CAD/CAM systems. 10

### UNIT - II

- 3 a. With a neat flow chart explain digital differential analyser line algorithm. 10
- b. Explain the complete data structure of geometric model of products. 10
- 4 a. Discuss the importance of concentration and homogeneous co-ordinates transformation in computer graphics. 10
- b. Explain the shading and rendering of images in CAD systems. 10

### UNIT - III

- 5 a. Explain the concept of constrain based modeling in modern CAD Systems. 10
- b. Discuss the modelling facilities desired in CAD software. 10
- 6 a. Explain the layer model of (GKS) graphics Kernot system. 10
- b. Discuss the different sections of IGES format for data exchange. 10

### UNIT - IV

- 7 a. Classify the curve representation methods and explain the parametric representation of Hyperbola. 10
- b. Explain the parametric representation of Bezier curves. 10
- 8 a. Discuss the surface entities provided by CAD/CAM system. 10
- b. Explain the features of surface manipulations. 10

### UNIT - V

- 9 a. Discuss the properties of representation that a solid model should possess. 10
- b. Differentiate between C-Rep and B-rep. 10
- 10 a. Discuss the different mating conditions that are used in assembly of geometric model. 10
- b. Explain how precedence graph is used for generation of assembly sequences. 10