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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/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

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| 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

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|---|----|---|----|
| 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

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| 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

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| 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

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| 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 |

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