M.Tech. Mechanical Engineering Design CBCS Pattern Semester-I

MED14 - Computer Aided Mechanical Design

P. Pages : 1 **GUG/W/23/14189**

Time : Three Hours Max. Marks : 70

Notes :
1. All questions carry equal marks.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.
4. Diagrams and Chemical equation should be given wherever necessary.
5. Illustrate your answers wherever necessary with the help of neat sketches.
6. Use of slide rule, Logarithmic tables, Steam tables, Mollier's chart, Drawing instruments, Thermodynamic tables for moist air, Psychrometric charts and Refrigeration charts is permitted. Non programmable electronic calculator is allowed.
7. Answer **any five** questions.
8. Use of non programmable calculator is permitted.

1. a) Explain the functional areas of basic CAD system and their applications in the design process. **7**

b) What is direct view storage tube? **7**

2. Write short note on: **14**

i) Stroke writing ii) Raster scan

3. a) Explain Bresenham's algorithm for generation of line. **7**

b) Describe conventional design process and computer Aided design. What are the advantages of CAD over conventional design cycle. Explain. **7**

4. a) Enlist various graphic input devices and explain any one of them. **7**

b) Develop the DDA algorithm to draw a line with slope such that $-\infty < m < -1$. **7**

5. a) What are the two basic techniques used in current computer graphics terminals for generating image on the CRT screen? **7**

b) What is Bezier curve? How it is defined and Where it is used? **7**

6. a) Explain with examples role of CAD in following areas of design. **7**

i) Geometric modeling ii) Engineering Analysis

b) What do you understand by B spline curves? **7**

7. a) Explain assembly modeling. **7**

b) What do you mean by Geometric modeling? **7**

8. Discuss: Development of interactive design programs for machine elements. **14**

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