PAPER ID-410206

Subject Code: RME701

Roll No: | | | | | | | | | | | | | |

B. TECH.
(SEM - VII) THEORY EXAMINATION 2021-22
COMPUTER AIDED DESIGN AND MANUFACTURING

Time: 3 Hours ***Total Marks: 70***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 7 = 14

a. Discuss local and global coordinate.
b. List any five G codes and M codes.
c. Explain type of computer aided process planning.
d. Describe the meaning of MRP?
e. Discuss the future scope of cad cam.
f. Define the meaning of STL?
g. Explain translation and reflection transformation.

SECTION B

2. Attempt any *three* of the following: 7 x 3 = 21

a. Discuss the procedure of Bresenhams circle algorithm with example.
b. Explain about finite element method. Write its advantages and applications.
c. Illustrate the generative type of computer aided process planning.
d. Discuss the Computer assisted part programming. And write about part family.
e. Illustrate about the flexible manufacturing system. And discuss about just in time.

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7

a) Discuss about geometrical transformation. Also explain types of geometrical transportation.
b) Using Bresenham's line algorithm, calculate the pixel positions along the line between end points (15,8) and (28,16).

4. Attempt any *one* part of the following: 7 x 1 = 7

(a) Illustrate the concept of product data exchange using STEP in detail.
(b) Illustrate the concept of mesh generation and mesh requirements.

5. Attempt any *one* part of the following: 7 x 1 = 7

(a) Illustrate the concept of product data exchange using STEP and IGES in detail.
(b) Illustrate the concept of Stiffness matrix. Also explain mesh generation and mesh requirements.

6. Attempt any *one* part of the following: 7 x 1 = 7

(a) A square 5.0 mm x 5.0 mm is to be milled using a 2 mm end milling cutter. Write an NC part program to make the square.
(b) Differentiate NC, CNC and DNC.

7. Attempt any *one* part of the following: 7 x 1 = 7

(a) Classified the different types of rapid prototyping techniques. Explain the Stereo lithography techniques with neat sketch.
(b) Illustrate the working procedure of fused deposited modeling process with neat sketch.