

Code: ME5T6

**III B.Tech - I Semester – Regular/Supplementary Examinations
October 2019**

**CAD/CAM
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1.

- a) List and explain various input devices used in CAD systems.
- b) Represent the 3D homogeneous transformation matrix for rotation about Z-axis.
- c) List out the properties of a good solid model.
- d) Summarize the rules in dimensioning of a drawing.
- e) Specify the coordinate systems in NC.
- f) What examples can you quote for CNC auxiliary functions?
- g) What are the applications of NC?
- h) Identify the potential problems in switching from process type layout to GT layout.
- i) Discuss the role of contact and non contact type inspection method.
- j) What do you understand by the term “Flexible Manufacturing System”?
- k) List out various FMS layout configurations.

PART – B

Answer any **THREE** questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Narrate the steps for line drawing by Bresenham's algorithm. Digitize a line with end points (20, 10) and (30, 18). 8 M
- b) Summarize the steps in Cohen Sutherland's line clipping algorithm. 8 M
3. a) What is the principle in mathematical representation of a Bezier curve? Write its features. 8 M
- b) Illustrate various editing operations available in CAD/CAM systems. 8 M
4. a) Compare and Contrast manual part programming and computer assisted part programming in NC systems. 8 M
- b) How do you distinguish the structure of conventional machine tools and CNC machine tools? 8 M
5. a) Narrate the features of Parts Classification and Coding systems. 8 M

b) What do you understand by the term "Machine Vision"?
Summarize the basic functions of a machine vision system.

8 M

6. a) Describe the role of material handling systems in CIM.

8 M

b) What are the benefits derived from CIM?

8 M