28/05/2019

Roll No. ..... Total Pages : 03

BT-6/M-19 **36129**

COMPUTER AIDED DESIGN & MANUFACTURING

ME-308-N

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. (a) Briefly describe the history of CAD/CAM development. **7**

   (b) Explain the product life cycle in conventional and computer-aided manufacturing environments. **8**

2. (a) What is computer integrated manufacturing (CIM) ? Explain the different elements of CIM. **8**

   (b) What is computer aided quality control ? What are its advantages ? **7**

Unit II

3. (a) What is parametric form of an equation and why is it required ? **5**

(b) Find the coordinates of the Hermite cubic curve at $u = 0.25$, when curve starts from (0, 3) and ends up (4, 2) with tangent at the start is defined by angle 45° and 90°. **10**

4. (a) Differentiate between a plane, ruled and tabulated surface. **7**

(b) Explain the boundary representation method of solid modelling with an example. **8**

Unit III

5. (a) What are basic transformations ? Explain them. **8**

(b) The homogeneous coordinate system is the most preferred way to be used in geometric modelling why ? **7**

6. (a) What is group technology (GT) ? Why is GT more important in present manufacturing scenario ? **5**

(b) What is the basis for forming part families in GT ? **5**

(c) Explain the Optiz Coding System with an example. **5**

Unit IV

7. (a) Explain the importance of machine control unit in NC. **5**

(b) What are various methods of interpolation in part programming ? Explain in detail. **10**

8. (a) Explain the principal components of flexible manufacturing system. **8**

(b) Explain in detail methodology followed for developing a generative type of computer aid process planning system. **7**