

IV B.Tech I Semester Supplementary Examinations, February 2007
 CAD-CAM
 (Common to Mechanical Engineering, Mechatronics and Production
 Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
 All Questions carry equal marks

1. Write short notes on the following:
 - (a) Random scan graphic terminal
 - (b) Digitizers and Image scanners
 - (c) CPU

[5+5+6]
2. What is meant by a geometric entity? Explain the common entities used in geometric modeling. [16]
3. Briefly discuss about the composite surface and Bezier surface. [16]
4. What do you mean by primitive instancing? Explain CSG scheme for complex solid modeling objects representation. [16]
5. (a) Discuss the special features of NC machine tool when compared to the conventional machine tools.
- (b) Write the manual part program manuscript using the word address format and absolute positioning system to drill the holes in the part shown in the figure 1. [8+8]

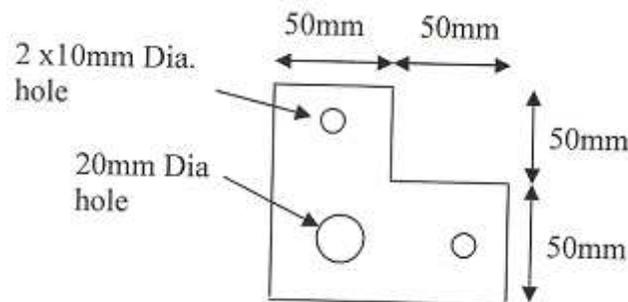


Figure 1:

6. (a) Explain Opitz classification system.
- (b) Discuss the basic code structures used in group technology. [8+8]
7. (a) Describe a materials handling system.
- (b) What are the three major elements of an ASRS? Explain. [8+8]

8. (a) Discuss the need and importance of Shop Floor Data Collection Systems.
What are their functions?
- (b) Illustrate with an example how the workflow is improved in concurrent engineering. [8+8]

IV B.Tech I Semester Supplementary Examinations, February 2007
CAD-CAM
(Common to Mechanical Engineering, Mechatronics and Production
Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What are the different types of operator input devices?
(b) Explain use of multicoloured images and animated pictures in CAD. [8+8]
2. Explain how 2-D and 3-D transformation are done on a graphics element. [16]
3. Describe a parametric surface patch with a neat sketch. Show all the boundary conditions and surface normals. [16]
4. What do you mean by geometric modeling? Enumerate various solid-modeling techniques and compare them. [16]
5. (a) Discuss the difficulties encountered in using conventional numerical control.
(b) Enumerate the advantages of Computer Assisted Part Programming when compared to Manual Part Programming. [8+8]
6. Explain the following classification and coding systems used in GT.
(a) The optiz classification system
(b) The code system
(c) The MICLASS system. [5+5+6]
7. (a) Describe a materials handling system.
(b) What are the three major elements of an ASRS? Explain. [8+8]
8. (a) Explain in detail the different types of database requirements in CIM.
(b) Discuss the integration of CAD database and CMM operation. [8+8]

IV B.Tech I Semester Supplementary Examinations, February 2007
CAD-CAM
(Common to Mechanical Engineering, Mechatronics and Production Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What are the reasons for implementing a computer aided design system.
(b) With the help of a block diagram, explain the computer aided design process. [8+8]
2. (a) Define Geometric model. Explain how a 3-D object is represented by a wire frame model.
(b) Distinguish between 2-D and 3-D wire frame models. [8+8]
3. Describe following with reference to a surface patch.
(a) Sub dividing
(b) Regenerative surface. [8+8]
4. (a) Apply the algorithms that perform Boolean operations and describe in B-rep.
(b) How can you use a cylinder primitive to generate a sphere? [8+8]
5. (a) Briefly discuss about the coordinate systems in NC system.
(b) Discuss the principal functions of Direct Numerical Control Systems. [8+8]
6. Explain the following classification and coding systems used in GT.
(a) The code system
(b) The MICLASS system. [8+8]
7. (a) Discuss the applications of FMS.
(b) Explain the different types of machines used in FMS workstations. [8+8]
8. (a) What is computer integrated manufacturing? Explain.
(b) Distinguish between Automation and Computer Integrated Manufacturing.
(c) Explain briefly the scope of Computer Integrated Manufacturing. [6+6+4]

IV B.Tech I Semester Supplementary Examinations, February 2007
CAD-CAM
(Common to Mechanical Engineering, Mechatronics and Production Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain how an image is generated and maintained in a direct beam refresh terminal.
(b) What is a digitizer? Explain how it can be used for transferring paper drawing to CAD system. [8+8]
2. (a) Define Geometric model. Explain how a 3-D object is represented by a wire frame model.
(b) Distinguish between 2-D and 3-D wire frame models. [8+8]
3. Describe following with reference to a surface patch.
(a) Sub dividing
(b) Regenerative surface. [8+8]
4. What do you mean by geometric modeling? Enumerate various solid-modeling techniques and compare them. [16]
5. (a) What is adaptive control system? Discuss its advantages to the manufacturing technology.
(b) Discuss the merits and demerits of NC system. [8+8]
6. (a) Develop the form code in the opitz system for any simple part of your choice.
(b) Discuss Product flow analysis. [8+8]
7. Explain the following:
(a) FMS data files and reports,
(b) FMS Applications. [8+8]
8. (a) What is computer integrated manufacturing? Explain.
(b) Distinguish between Automation and Computer Integrated Manufacturing.
(c) Explain briefly the scope of Computer Integrated Manufacturing. [6+6+4]
