Registration No. : | | | | | | | | | | |

Total number of printed pages – 2

B. Tech

PEME 5302

Fifth Semester (Special / Back) Examination – 2013

CAD AND CAM

BRANCH : MECH

QUESTION CODE : D 335

Full Marks – 70

Time : 3 Hours

*Answer Question No. **1** which is compulsory and any **five** from the rest.*
The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2×10
   (a) Write the fundamental reasons for implementing computer aided design.
   (b) What do you mean by interactive computer graphics (ICG) ?
   (c) Write the advantages of using magnetic tape as storage device.
   (d) Name any two editing features available on a CAD system.
   (e) Explain the design process by evaluation.
   (f) Define numerical control.
   (g) What is punched tape in NC ?
   (h) Name different intersecting surfaces in APT.
   (i) What are the control designs in CNC ?
   (j) Write two major benefits of adaptive control machining.
2. Describe with the flow chat of the general design process and briefly explain each step of design. 10
3. (a) Write the functions of the design workstation and discuss about the hardware components of the interactive graphics workstation. 5
   (b) Explain the different modules of a graphic software configuration. 5
4. A line in two dimensional space has end points defined by (1, 1) and (1,3). It is desired to move this line by a series of transformations so that its end points will be at (0,1) and (0,5). 10
   (a) Describe the sequence of transformations required to accomplish the movement of the line as specified.
   (b) For each transformation in the sequence, write the transformation matrix.

P.T.O.

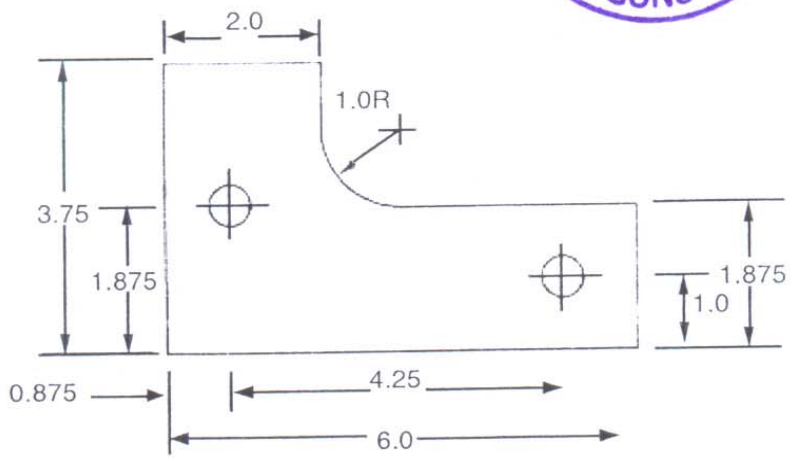
5. (a) Explain the NC motion control system. 5

(b) Discussin detail the steps in computer assisted part programming. 5

6. A profile milling operation is to be performed to generate the outline of the part as shown in figure. The two holes have already been drilled and will be used to clamp the part to the machine table. The part is ½ inch thick.

(a) Write the APT geometry statement to define the part outline.

(b) Write the sequence of APT motion statements to perform the profile milling around the periphery of the part. Use a location 3 inch below and 3 inch to the left of to the lower left hand corner of the part as the target point for the FROM statement. Assume that the part has been cut to rough size with a handsaw. This has left about 1/8 inch of material to be cut in the final profiling pass. 10



7. (a) What are the advantages of CNC ? 5

(b) Explain about different material handling systems. 5

8. Write shorts notes on any **four** of the following :. 2.5×4

(a) Database structure

(b) Computer Integrated Manufacturing system

(c) Combined CNC/DNC system

(d) Graphical terminals

(e) Solid modeling.