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

Total number of printed pages – 2

B. Tech

PEME 5302

Fifth Semester Back Examination – 2014

CAD AND CAM

BRANCH : MECH

QUESTION CODE : L279

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) What is Digitizers ? What are its functions ?

   (b) Name the techniques used in for generating image in CRT screen.

   (c) What do you mean by Random scan graphic terminal ?

   (d) Write the objective of concatenation.

   (e) Name different output devices of a CAD system.

   (f) Name different types of memory.

   (g) What are the different NC motion control systems ?

   (h) Name different intersecting surfaces in APT.

   (i) Write the components of DNC.

   (j) Define the contouring NC motion control system.

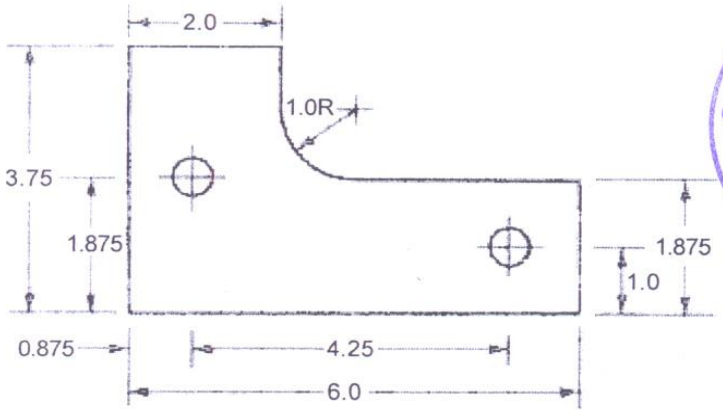
2. Explain in detail with help of flow diagram the applications of computer in different activities of the design process. 10

3. (a) Define CAD work station and discuss about its functions. 5

   (b) Define Cursor control device and explain about different types of such devices used in CAD system. 5

P.T.O.

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).
   (a) Describe the sequence of transformations required to accomplish the movement of the line as specified. 5
   (b) For each transformation in the sequence, write the transformation matrix. 5
5. (a) What is meant by Interactive Computer Graphics ? Explain its various elements. 5
   (b) Explain the different modules of a graphic software configuration. 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. 5
   (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. 5



7. (a) State the general characteristics of production jobs in metal machining for which numerical control would be most appropriate. 5
   (b) Explain about different material handling systems. 5
8. Write shorts notes on any **four** : 2.5 × 4
   (a) Computer Integrated Manufacturing system
   (b) Combined CNC/DNC system
   (c) Graphical terminals
   (d) Wire frame modeling
   (e) Plotters.