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

Total number of printed pages – 2

B. Tech

PEME 5302

Fifth Semester Examination – 2013

CAD AND CAM

BRANCH : MECH

QUESTION CODE : C-325

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 are the operating units of CPU ?

   (b) Define automated drafting.

   (c) Differentiate wire frame and solid models.

   (d) Write the objective of concatenation.

   (e) Show the basic hardware structure of a digital computer.

   (f) Define the contouring NC motion control system.

   (g) What are the part programmers' jobs in computer assisted part programming ?

   (h) What are the different types of statements in the APT ?

   (i) Write the components of DNC.

   (j) What are different types of adaptive control ?

2. Explain, in detail, the application of computer in the various design related tasks which are performed by a modern CAD system. 10

3. (a) Explain different types of graphic terminals. 5

   (b) Discuss, in detail, the different ground rules that should be considered in designing graphic software. 5

P.T.O.

4. A line is defined in two dimensional space by its end points (1, 2) and (6, 4). Express this in matrix notation and perform the following transformations in succession on this line : 10

   (a) Rotate the line by 90° about the origin

   (b) Scale the line by a factor 1/2

   (c) Show the sequence of transformation.

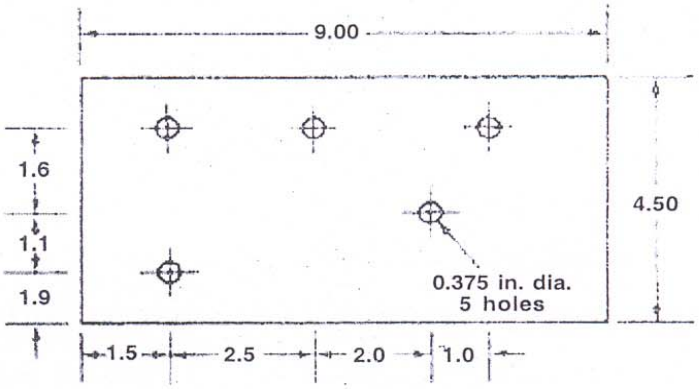
5. (a) Explain the basic components of an NC system. 5

   (b) Discuss about different NC part programming languages. 5

6. The work part is to be completed in an NC drill press. The outline of the part has already been completed and the five holes are to be drilled. The axis system for this sequence is to be located with the origin at the lower left-hand corner of the part. The part is 3/8 inch thick.

   (a) Write the APT geometry statements to define the hole locations. 5

   (b) Write the sequence of motion statement in APT to perform the drilling sequence. Use a point at x = –1 and y = –3 at the target point for the FROM statement. 5



7. (a) Discuss, in details, the problems with conventional NC technology. 5

   (b) Explain the principal functions of CNC. 5

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

   (a) Lean manufacturing

   (b) Adaptive control manufacturing system

   (c) Robots

   (d) Plotters

   (e) Wire frame modelling.