Printed Pages—3　　　　　　　　　　　　　　　　ME—702

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 4021　　Roll No. | | | | | | | | | |

B.Tech.

SEVENTH SEMESTER EXAMINATION, 2006 - 07

COMPUTER AIDED MANUFACTURING (CAM)

Time : 3 Hours　　　　　　　　　　　　　　*Total Marks : 100*

Note :　(i)　*Attempt **ALL** questions.*

(ii)　*All questions carry equal marks.*

(iii)　*In case of numerical problems assume data wherever not provided.*

(iv)　*Be precise in your answer.*

1.　Attempt *any four* parts of the following :　　　(5x4=20)

(a)　State the importance of automation. What are various types of automation systems ?

(b)　Distinguish between open loop and closed loop control systems.

(c)　Describe the basic components of a NC machine.

(d)　What are the advantages of NC machines over conventional machines ?

(e)　Explain the importance of NC coordinate systems.

(f)　State the advantages of CNC machine over corresponding NC machine.

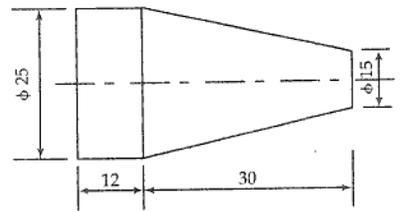ME—702　　　　　　　　　　1　　　　　　　　　　*[Turn Over*

2. Attempt *any four* parts of the following :   (5x4=20)

    (a) Write a short note on "NC words".

    (b) What are different types of statements used in APT language ?

    (c) Write a short note on "Macro statement".

    (d) What are canned cycle ? Explain their use.

    (e) Write NC part program for the following job (Refer fig 1). All dimension are in mm.

(Fig. 1)

    (f) Write NC part program for the following job (Refer fig 2). All dimensions are in mm.
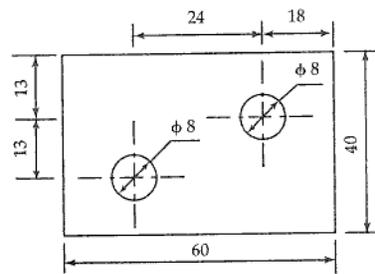
(Fig. 2)

3. Attempt *any two* parts of the following :   (10x2=20)

    (a) What do you understand by DDA ? Describe the principle of operation of DDA integrator.

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(b) Write short notes on the following :

   (i) Stepping motor

   (ii) Feed back devices.

(c) Explain closed loop control with the help of a block diagram.

4. Attempt *any two* parts of the following :   (10x2=20)

   (a) State the functions of computers in a CIM system.

   (b) Write short notes on the following :

      (i) Transfer lines

      (ii) Classification of manufacturing systems.

   (c) What do you understand by FMS ? What are the advantages of this system ? Where it is beneficial to use ?

5. Attempt *any two* parts of the following :   (10x2=20)

   (a) What is a Robot ? Explain the basic configuration of robot motions.

   (b) Write the general considerations of robot application. Also mention any five application areas where robots are very useful.

   (c) What do you mean by "Artificial Intelligence" ? Explain its application to manufacturing processes.

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