Con. 6112-10.

(REVISED COURSE)

GT-8772

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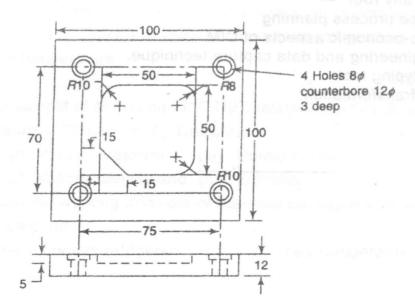
(4 Hours)

[Total Marks: 100

- N.B.: (1) Question No. 1 is compulsory.
 - (2) Attempt any four questions out of remaining six questions
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data if necessary.
- 1. (a) Explain the type of database structure that is generally employed in solid modelling.
 - (b) What are the problems with Bezier curves? How are these taken care of?
 - (c) "The handling system establishes the FMS layout". Explain above statement with respect to handling system used in FMS.
 - (d) Explain similarity coefficient matrix? Why it is used?
- 2. (a) Explain phases of CAD process. What is the importance of Concurrent Engineering in product development cycle?
 - (b) Find the transformed coordinates when a line [(3,4), (4,2) is rotated about a Z axis by an angle of 45° in anticlockwise direction.
 - (c) Explain co-ordinate measuring machine.
- 3. (a) Find the degree of the Bezier curve controlled by three points (4,2), (0,0) and (2,8). Also find the equation of the Bezier curve in parametric format with parameter 'u'.
 - (b) Write a part program using G and M codes to machine the contour as shown in 1 figure and drill a hole. The component is 18 mm thick.

Assume :-

- (i) Suitable tools and name them.
- (ii) Suitable speed and feed for machining.
- (iii) Show starting point and load/unload point.



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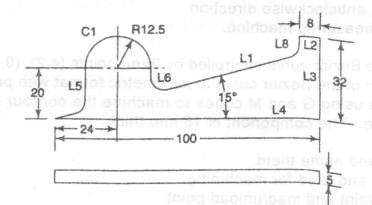
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4. (a) Compare wire frame modeling and solid modeling.

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- (b) Justify how reflection is a special case of scaling transformation.
- (c) Explain part classification and coding in Group technology in detail.
- 5. (a) Explain the basic components of AS/RS System. Enlist the types of AS/RS. (Explain any one in detail). What are the criteria to measure the performance of AS/RS Systems?
 - (b) With neat sketch of CIM wheel, explain the salient features of CIM system.
- 6. (a) Explain following terms :-
 - (i) Tool length compensation
 - (ii) Dry run.
 - (b) Write a complete APT program to machine the outline of the geometry as shown in figure 2.

Assume suitable data.



- 7. Write short notes on any four :-
 - (a) Genrative type process planning.
 - (b) Socio-techno-economic aspects of CIM.
 - (c) Reverse Engineering and data capture technique.
 - (d) Virtual prototyping tool.
 - (e) 3D Rotation transformation.

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