B.Tech III Year II Semester (R13) Regular Examinations May/June 2016

CAD/CAM
(Mechanical Engineering)

Time: 3 hours   Max. Marks: 70

PART – A
(Compulsory Question)
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1   Answer the following: (10 X 02 = 20 Marks)
  (a)   What are the various activities of a manufacturing plant which can be carried out through computer control?
  (b)   What is homogeneous transformation?
  (c)   What are the common modeling methods available for surface design in a surface modeling software?
  (d)   What are the commands and their sequence to create 2D and 3D wire frame models of the following components: (i) A bracket? (ii) A spur gear?
  (e)   Differentiate among design model, work piece model and manufacturing model in CAM software.
  (f)   Why is a ball nose cutter used in machining of curved surfaces?
  (g)   What are the benefits of Group Technology?
  (h)   What are the objectives of computer aided quality control?
  (i)   How does a bar code reader work?
  (j)   Why is master schedule important? How does master schedule accommodate flexibility in manufacturing?

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2   What are the various activities of a manufacturing plant which can be carried out through computer control?

OR

3   With neat sketch explain the main elements of CIM systems.

UNIT – II

4   Describe briefly the following methods of surface modeling with a few application examples:
  (a)   Bicubic surface.
  (b)   Bezier surface.

OR

5   Compare the splines for the same control points created by B - spline and Bezier- spline techniques.
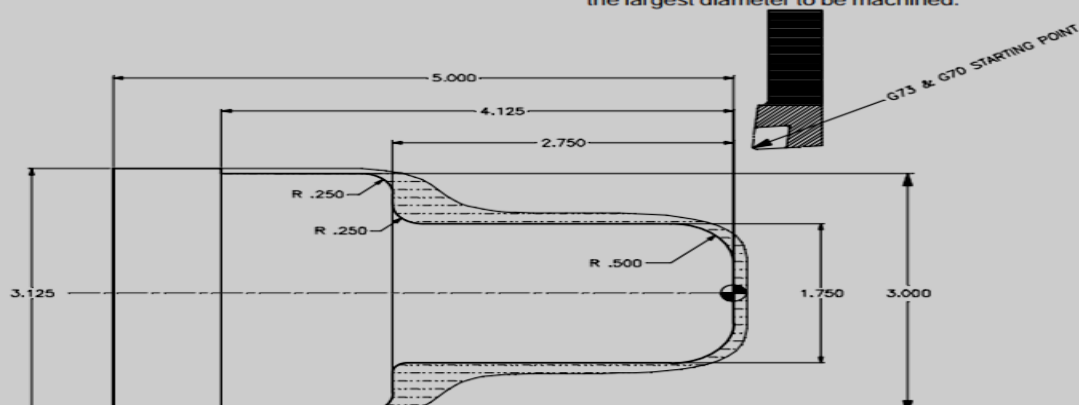
UNIT – III

6   Explain the various type of adaptive control machining system.

OR

7   Write a CNC program for a given component below, using G and M Code.

G73/G70 EXERCISE WITH TOOL NOSE COMP.

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UNIT – IV

8   With the aid of an example, explain OPITZ parts classification and coding systems.

OR

9   With neat sketch explain the working principle of Coordinate Measuring Machine (CMM) used for contact inspection of machine parts.

UNIT – V

10   Explain with neat sketches the variant and generative approaches of CAPP systems with advantages and disadvantages highlighted.

OR

11   Explain the various of module of material requirement planning and capacity requirement planning.

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