PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2018 - 19 Examination

Semester: 5/7   Date: 15/05/2019
Subject Code: 03109303   Time: 10:30am to 1:00pm
Subject Name: Computer Aided Design and   Total Marks: 60
                Computer Aided Manufacturing

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions.   **(15)**
   1. The number of lines required to represent a cube in a wireframe model is:
   a) 8   b)6   c)12   d)16
   2. The axes of turning machine are:
     (a) Z and X-axes   (b) X and Y-axes   (c) Z and Y-axes   (d) X, Y
     and Z
   3. In computer aided drafting practice, an arc is defined by
     (a) Two end points only   (b) Center only
     (c) Radius only   (d) Two end points and center
   4. The following is not a graphics standard
     (a) GKS   (b) IGES   (c) UNIX   (d) PHIGS
   5. The screen is scanned from left to right, top to bottom all the time to generate graphics by:
   (a) Raster scan   (b) Random scan   (c) Vector scan   (d) Stoke
   writing
   6. The rate at which the cutting tool and the work piece move in relation to one another is called
   7. The shape of the Bezier curve is controlled by _____points.
   8. CNC stands for _____.
   9. Scaling matrix for x and y direction is_____.
   10. CIM is the acronym of _____
   11. Intersection, Union and Subtraction are type of _____operations.
   12. The heart of a computer is _____.
   13. GUI is the acronym of _____.
   14. The M in M-code is _____.
   15. Extrude command is _____modeling.

Q.2 Answer the following questions. (Attempt any three)   **(15)**
   A) Discuss the merits and demerits of CNC machines.
   B) Plot Bresenhams algorithm for line whose starting point (2, 2) & end point (7, 4).
   C) Explain Constructive Solid Geometry in detail with suitable example.
   D) Distinguish between Conventional Design and Computer Aided Design system with CAD
   architecture.

Q.3 A) Give the classification of CNC machines.   **(07)**
   B) ΔABC having vertices A(2, 3) , B(6, 3) and C(4, 8) is reflected about a line y=3x+4. Find the   **(08)**
   coordinates for reflected triangle.

<div align="center">OR</div>

   B) The coordinates of four control points relative to a curve is given by P1(2,2) P2(2,3) P3(3, 3) and   **(08)**
   P4(3,2). Find the coordinate pixels for u= 0, 0.25, 0.5, 0.75, 1. Also plot the Bezier curve on graph.

Q.4 A) Write a milling Part Program for the geometry given in figure 1.   **(07)**
   Tool T01 : End milling Diameter 6 mm
   Tool T02 : Drill tool Diameter 6 mm
   Tool T03 : Drill tool Diameter 16 mm.

<div align="center">OR</div>

   A) Write a turning Part Program for the geometry given in figure 2.   **(07)**
   Raw Material Size: ø 40 mm x 88 mm length. Assume suitable cutting parameters.
   B) What is canned cycle? Explain any three canned cycles with sketch.   **(08)**
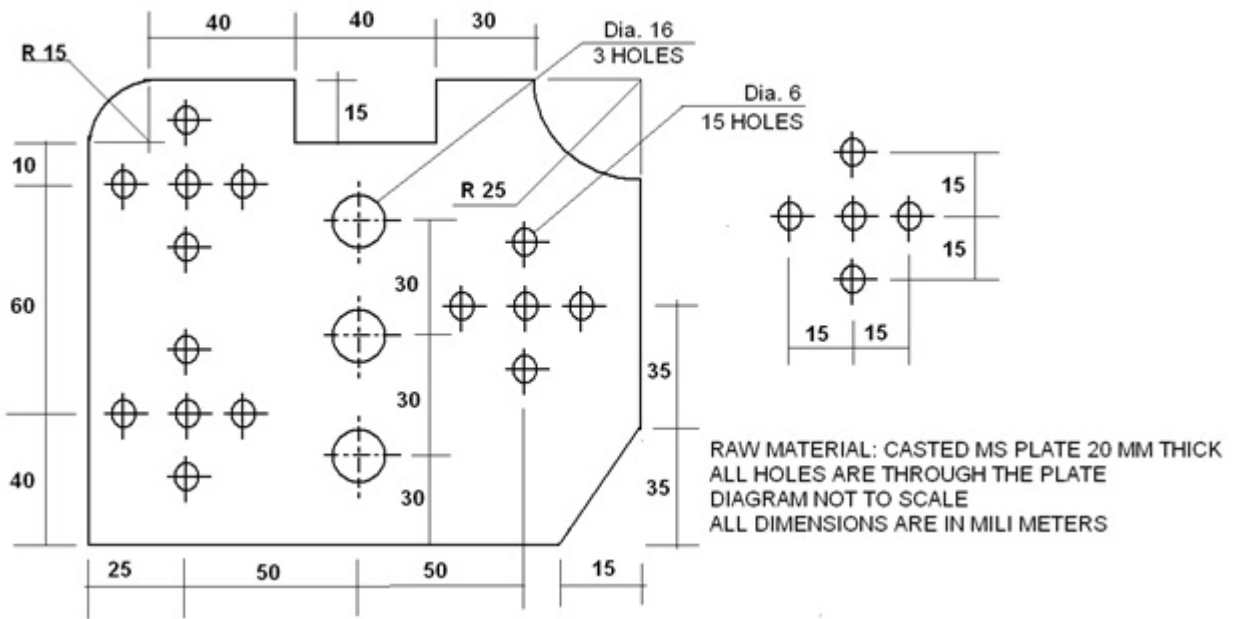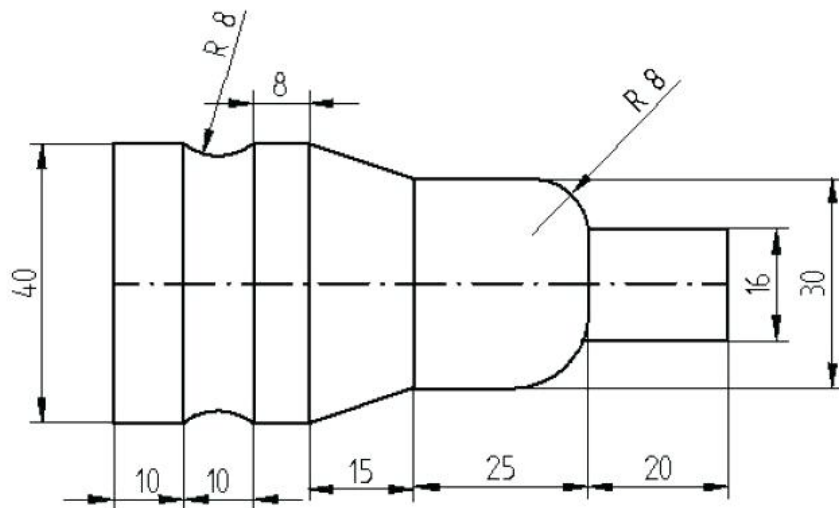
Figure 1

RAW MATERIAL: CASTED MS PLATE 20 MM THICK
ALL HOLES ARE THROUGH THE PLATE
DIAGRAM NOT TO SCALE
ALL DIMENSIONS ARE IN MILI METERS

Figure 2