Seat No: _____ Enrollment No: _____

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech. Winter 2022 - 23 Examination

Semester: 7 **Date: 03/10/2022**
Subject Code: 203113401 **Time: 10:30 am to 01:00 pm**
Subject Name: Advanced Manufacturing System **Total Marks: 60**

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 - (Each of one mark) **(15)**

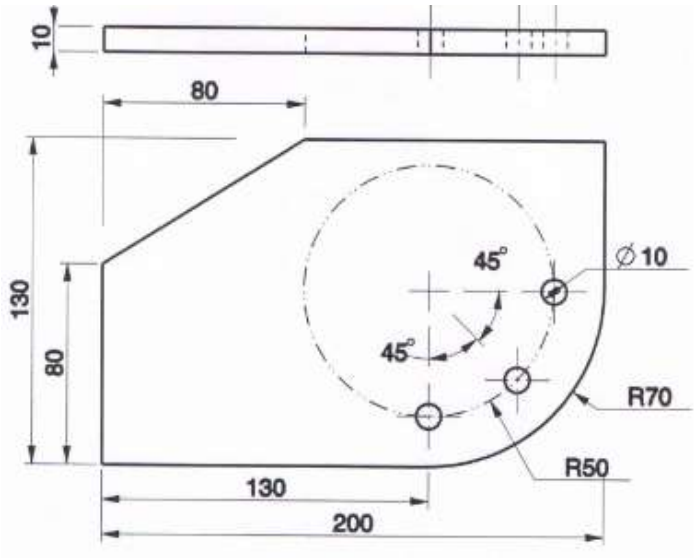
1. The axes of CNC lathe machine can be labelled as :
(a) Z and X-axes (b) X and Y-axes (c) Z and Y-axes (d) X, Y and Z-axes
2. Linear interpolation is performed using : (a) G01 (b) G02 (c) G03 (d) G71
3. Rectangular Pocketing is created using
(a) G170-G171 (b) G171-G170 (c) G172-G173 (d) G00
4. The code for Rapid traverse/positioning mode is : (a) M00 (b) M01 (c) G00 (d) G03
5. Canned cycle for turning is (a) G90 (b) G91 (c) G92 (d) G94
6. Dwell is given by_____ Code.
7. _____describes integrated applications of computers in manufacturing.
8. In _____production, manufacturing lot sizes are small and great variety in the type of work.
9. _____ is an independent and self-operated vehicle which is used for transporting the material from the stores to the shop floor or vice-versa.
10. _____ used as input for NC machine tool**.**
11. In a _____ system, many machine tools can be controlled simultaneously.
12. In _____ part programming method, the tool movement is not measured from the part origin and it is measured from the present position of the tool.
13. CAPP stands for _____.
14. Full form of JIT is _____.
15. AS/RS stands for _____

Q.2 Answer the following questions. (Attempt any three) **(15)**

A) Explain Group technology listing out its advantages and disadvantages
B) What do you understand by Cellular Manufacturing? Explain giving and example.
C) Explain the CIM wheel to understand the basic functions of Computer Integrated Manufacturing.
D) What do you understand by FMS? Enlist the various flexibilities aligned with FMS and explain any two giving details.

Q.3 A) Explain the following: Rank order Clustering, Composite part concept. **(07)**

B) Write a manual part program for profile milling and hole drilling using a machining center. Show the part zero. All dimensions are in mm. **(08)**



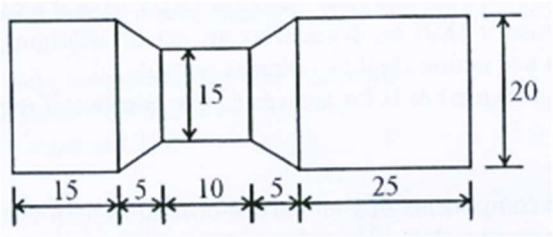
OR

B) Explain the importance of Cutter Radius compensation with neat sketch : G40, G41, G42 **(08)**

Q.4 A) Explain the following canned cycles : G73, G70 **(07)**

OR

A) Write a part program for component shown in Figure **(07)**



B) What are the main functions of process planning? Explain the issues related to manual process planning. **(08)**