

IV B. TECH I SEMESTER REGULAR EXAMINATIONS, NOVEMBER - 2023
CAD/CAM
(MECHANICAL ENGINEERING)

Time: 3 hours

Max. Marks: 70

Note : Answer ONE question from each unit (5 × 14 = 70 Marks)

UNIT-I

- 1. a) With the help of a block diagram, explain the computer aided design process. [7M]
- b) Write short note on any two display devices. [7M]

(OR)

- 2. a) A triangle is defined in a two dimensional coordinate system by its vertices (0, 2), (0, 3) and (1, 2). Construct the following transformations on this triangle: (i) Rotate the triangle by 45° about the origin (ii) translate the original triangle 2 units in X-direction and 3-units in Y direction. [7M]
- b) Illustrate raster-scan graphics system with neat diagram. [7M]

UNIT-II

- 3. a) What is a B-spline curve? Classify the properties of B-spline curve. [7M]
- b) Fit a Bezier curve having control point: P₀(1,1), P₁(3,6), P₂(5,7) and P₃(7,4) and find out points on it for u =0.4 and 0.6. [7M]

(OR)

- 4. a) What is meant by Surface modeling? Distinguish between parametric and analytic representation of surfaces. [7M]
- b) In detail explain the salient features of solid modeling. [7M]

UNIT-III

- 5. a) What is numerical control? Illustrate various elements of NC with a neat diagram. [7M]
- b) Briefly describe the CNC machining centers. With the help of a diagram differentiate between the operations of canned cycles G81 and G82. [7M]

(OR)

- 6. a) Build a manual program without considering the cutter size into account for the following figure. The spindle speed is 600 RPM. The feed rate is 100 mm/min. [7M]

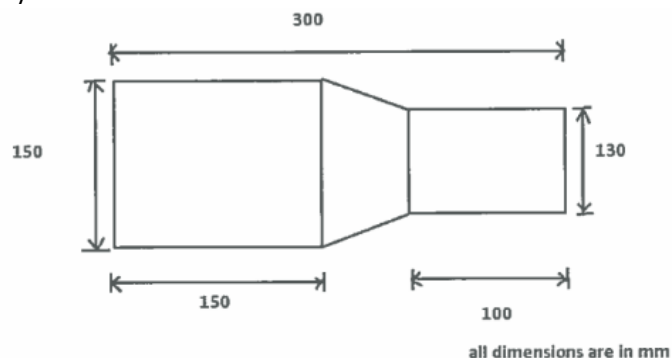
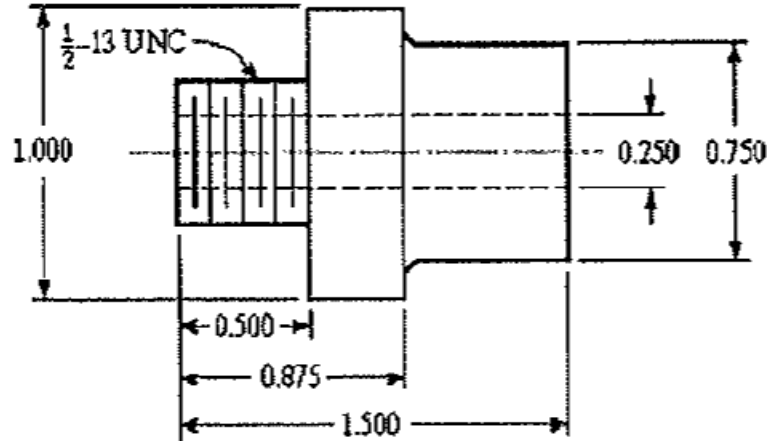


Fig.

- b) Write the block format of G01, G02 and G03 preparatory functions used in NC programming. [7M]

UNIT-IV

7. a) Explain in detail the GT parts classification & coding system. [7M]
 b) Develop the OPITZ from code and chat (first 5 digits) with justification for the component shown in Fig. [7M]



(OR)

8. a) Illustrate the working of a retrieval and generative CAPP system. [7M]
 b) Define FMS and explain with a neat sketch analyze various components of an FMS. [7M]

UNIT-V

9. a) Discuss the principal elements of CIM systems. [7M]
 b) Outline CIM integration of all activities of industry. [7M]

(OR)

10. a) Write short notes on (i) CAQC (ii) CIM [7M]
 b) Explain any one non-optical inspection method with suitable sketch. [7M]
