

**Code: 7G574**

IV B.Tech. I Semester Supplementary Examinations March/April 2023

**CAD/CAM**

(Mechanical Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)

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Marks CO BL

**UNIT-I**

1. With the help of neat sketches, describe construction, working, advantages, limitations and applications of any two input devices.

14M 1 1 &amp; 2

**OR**

2. a) A rectangle is defined by its corner points (2,2), (2,8), (10,8) and (10,2). Rotate the rectangle by an angle of 30 counterclockwise and then followed by a scaling with a factor of 2. Solve the above transformations and plot.
- b) Compare and contrast conventional design process with CAD process.

8M 1 1 &amp; 2

6M 1 1 &amp; 2

**UNIT-II**

3. a) Derive the parametric representation of a Hermite Cubic Spline curve.
- b) Write a note on surface patch.

10M 2 2

4M 2 2

**OR**

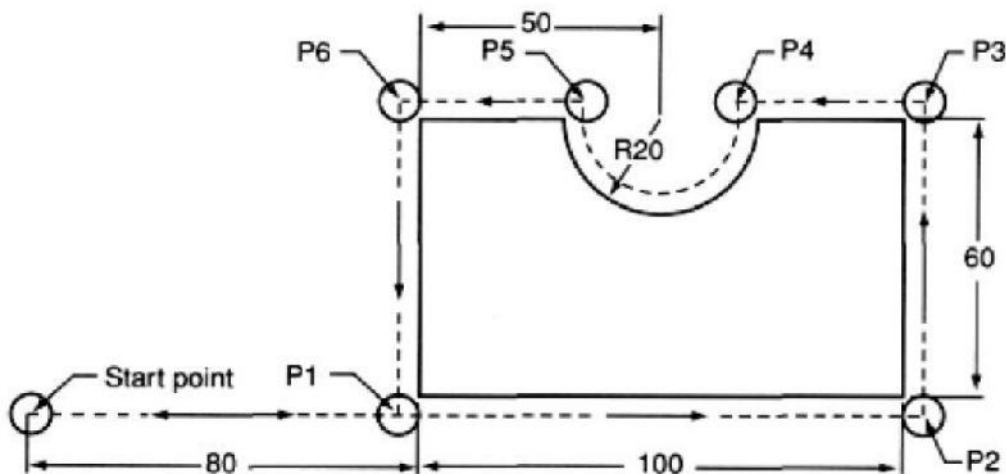
4. a) Differentiate B-rep and CSG representation schemes.
- b) List various wireframe and surface entities.

10M 2 2

4M 2 2

**UNIT-III**

5. Write a part program for the object shown below. All dimensions are in mm.



14M 3 3

**OR**

- |       |   |    |   |   |
|-------|---|----|---|---|
| 6. a) | With the help of a neat sketch, explain the structure of CNC machine tools.                         | 7M | 3 | 3 |
| b)    | Compare and contrast advantages of computer assisted part programming over manual part programming. | 7M | 3 | 3 |

**UNIT-IV**

- |       |  |     |   |   |
|-------|--|-----|---|---|
| 7. a) | Discuss on group technology. Justify its significance in the integration of CAD and CAM. | 10M | 4 | 3 |
| b)    | Write a brief note on production flow analysis.  | 4M  | 4 | 3 |

**OR**

- |    |   |     |   |   |
|----|---|-----|---|---|
| 8. | Discuss the principles of material handling. Name and describe any four types of material handling devices. | 14M | 4 | 3 |
|----|---|-----|---|---|

**UNIT-V**

- |       |  |    |   |   |
|-------|--|----|---|---|
| 9. a) | What are the fundamental concepts in MRP? Explain them.                    | 7M | 5 | 4 |
| b)    | Explain the method of part inspection using Co-ordinate measuring machine. | 7M | 5 | 4 |

**OR**

- |        |  |    |   |   |
|--------|--|----|---|---|
| 10. a) | Define computer aided quality control. Explain its implementation in detail. | 7M | 5 | 4 |
| b)     | Compare online and offline inspection.                                       | 7M | 5 | 4 |

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