

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

Part- A (25 Marks)

- 1.a) List out the computer peripherals' for CAD [2]
- b) Differentiate between the database and data structure [3]
- c) What is blending function? [2]
- d) Write the parametric equation of Surface of revolution [3]
- e) Define the MCU, DPU, CLU in NC system [2]
- f) Differentiate the ACO and ACC type adaptive controllers [3]
- g) What is an ideal cell? [2]
- h) What are the benefits of MRP [3]
- i) State the objectives of quality control [2]
- j) Distinguish between the FMS and FMC [3]

Part- B (50 Marks)

- 2.a) How CAD/CAM systems are evaluated? Explain in detail by categorizing different evaluation parameters during selection.
- b) What is automation? Explain the various categories of automation. [5+5]

OR

- 3.a) Compare the Bezier and B spline curves and derive the parametric equations of both.
- b) What are the manipulation curve fitting techniques used in wire frame modeling? [5+5]
- 4.a) What is the difference between the B spline and Coon's surface? Explain.
- b) An ellipse with semi major axis $a=1$ and semi minor axis $b=5$ is to be rotated, the axis of revolution passes through center of the ellipse and lies in the plane xy . Revolve this curve about x axis through 2π to obtain a surface revolution. Calculate the surface point at $\theta = \pi/2$ and $\Phi = \pi$. [5+5]

OR

- 5.a) With suitable example briefly explain about the C rep modeling and B rep modeling.
- b) Differentiate between the linear sweep and rotational sweep. [5+5]
- 6.a) What are the major components of NC machine? Explain in detail
- b) What are the advantages of computer assisted part programming over manual part programming. [5+5]

OR

- 7.a) Briefly explain functions of CNC and DNC systems.
- b) What are the four types of statement in APT language? [5+5]

- 8.a) What factors must be considered in selecting a classification and coding system
b) Discuss with examples of the following.
i) Mono code ii) Poly code iii) Mixed code.

[5+5]

OR

- 9.a) Discuss a variant process planning system.
b) Explain the enterprise resource planning and capacity requirements planning.

[5+5]

- 10.a) Explain principal components of FMS.
b) Discuss various attributes of guidance and AGV systems.

[5+5]

OR

- 11.a) Sketch and explain elements of machine vision system.
b) What are benefits of CIM?

[5+5]

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