

**Code No: 117BD****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech IV Year I Semester Examinations, November/December - 2018****CAD/CAM****(Common to AE, AME, MSNT, ME)****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) What is Parametric CAD system? [2]
- b) Differentiate between implicit and explicit functions. [3]
- c) What is meant by Surface Patch? [2]
- d) What are the Boolean operations used in solid modelling? [3]
- e) Define APT. [2]
- f) What are the different elements of NC system? [3]
- g) Define variant approach. [2]
- h) What is the need of Group Technology? [3]
- i) Give some advantages by the implementation of CIM. [2]
- j) How SME (Society of Manufacturing Engineers) defined CIM? [3]

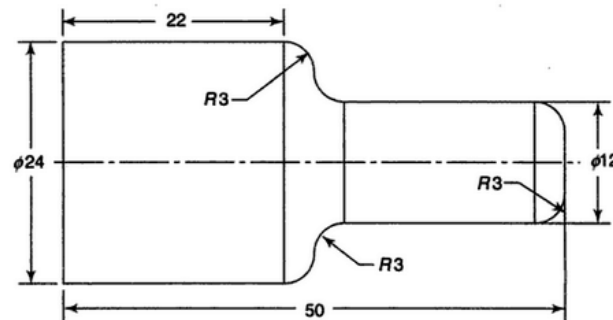
**PART-B****(50 Marks)**

- 2.a) Briefly describe the types of storage devices used in computers.
  - b) Explain the concepts of parametric and non-parametric curves with examples. [5+5]
- OR**
- 3.a) Differentiate the terms wire frame, surface and solid models, along with their benefits.
  - b) Write the properties of Bezier and B-Spline curves. [5+5]
- 4.a) What are the different types of geometric relations? Why would you use them in 3D geometric modeling?
  - b) What is Hermite cubic spline curve? Derive a general characteristic equation for cubic spline curve. [5+5]
- OR**
- 5.a) Find the equation of a Bezier curve which is defined by four control points as (80,30,0), (100,100,0), (200,100,0) and (250,30,0).
  - b) Sketch the geometric parameters required to create these surface operations:
    - i) Tabulated cylinder
    - ii) Revolve
    - iii) Sweep
    - iv) Loft. [5+5]

- 6.a) What are the main features of CNC Machine Tool? Write any 10 G-codes and 10 M-codes with a short description.
- b) Discuss the advantages of computer assisted part programming over manual part programming. [5+5]

**OR**

- 7.a) Explain the difference between CNC and DNC along with neat sketches.
- b) Write NC part program for the part shown in the below figure. All the dimensions are in mm only. [5+5]



- 8.a) Define and explain the principle of GT (Group Technology) in manufacturing.
- b) What is the philosophy of JIT (Just in Time)? Give any simple example. [5+5]

**OR**

- 9.a) What are the OUTPUTS of MRP? Explain their uses.
- b) Explain the difficulties in traditional process planning. [5+5]
- 10.a) Describe the following with respect to CIM.
- Process monitoring and control
  - Quality control.
- b) How does Lean manufacturing differ from Flexible manufacturing system? Explain. [5+5]

**OR**

- 11.a) How do you evaluate the performance of FMS (Flexible Manufacturing System).
- b) Explain the following terms:
- Online inspection
  - Off line inspection
  - In-Process inspection
  - Post-process inspection. [5+5]

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