

OLD QUESTION PAPER

CAD/CAM

R18

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)

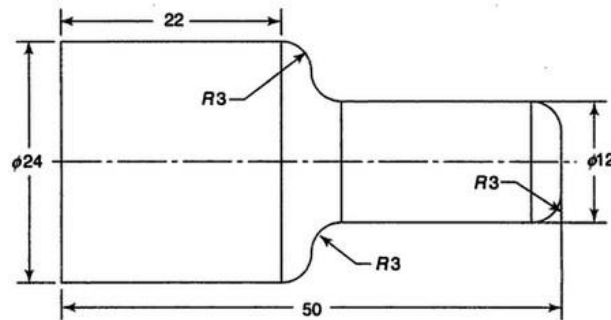
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|---|-------|
| 2.a) Briefly describe the types of storage devices used in computers. | |
| b) Explain the concepts of parametric and non-parametric curves with examples. | [5+5] |
| OR | |
| 3.a) Differentiate the terms wire frame, surface and solid 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:
- Tabulated cylinder
 - Revolve
 - Sweep
 - Loft.
- [5+5]

- i) 6.a) What are the main features of CNC Machine Tool? Write any 10 G-codes and 10 M-codes with a short description.
- ii) b) Discuss the advantages of computer assisted part programming over manual part programming. [5+5]
- iii) **OR**
- iv) 7.a) Explain the difference between CNC and DNC along with neat sketches.
- v) b) Write NC part program for the part shown in the below figure. All the dimensions are in mm only. [5+5]



- vi)
- vii) 8.a) Define and explain the principle of GT (Group Technology) in manufacturing.
- viii) b) What is the philosophy of JIT (Just in Time)? Give any simple example. [5+5]
- ix) **OR**
- x) 9.a) What are the OUTPUTS of MRP? Explain their uses.
- xi) b) Explain the difficulties in traditional process planning. [5+5]
- xii)
- xiii) Describe the following with respect to CIM.
- xiv) Process monitoring and control
- xv) Quality control.
- xvi) b) How does Lean manufacturing differ from Flexible manufacturing system? Explain.
- xvii) [5+5]

OR

- 11.b) How do you evaluate the performance of FMS (Flexible Manufacturing System).
- b) Explain the following terms:
- Online inspection
 - Off line inspection



- iii) In-Process inspection
- iv) Post-process inspection.

[5+5]

