

ANNA UNIVERSITY - 2006
B.E/B.TECH VI SEMESTER DEGREE EXAMINATION
COMPUTER AIDED MANUFACTURING
(MECHANICAL ENGINEERING)

TIME-3HOUR
MARK-100

ANSWER ALL QUESTIONS

PART A (10 * 2 = 20)

1. What is the basis for forming groups in group technology?
2. Justify the importance of rapid prototyping technology in the current day manufacturing scenario.
3. Briefly state about the co-ordinate axis nomenclature of a modern CNC milling machine.
4. Distinguish point to point and continuous path CNC control.
5. What is a machining center? How it differs from conventional CNC milling machine?
6. What is a rotary type encoder?
7. What do you understand by 'modal' and 'non-modal' G codes
8. What is meant by canned cycle? List any 4 types of canned cycle machining.
9. What are the objectives of Product Data Management system?
10. What is the philosophy of Just in Time (JIT)?

PART B (5 * 16 = 80)

11. (i) Describe the types of electrical drives used for speed and feed control in CNC machine tools
(ii) Explain constructional features of linear slides of CNC machines
12. (a). (i) Explain the Optiz coding system generally used in group technology. (8 Marks)
(ii) Explain the methodology to be followed for developing a generative type computer aided process planning system
(OR)
(b). (i) Explain the stages involved in the development and manufacturing of a new product
(ii) With a neat sketch, explain the principle of any one type of currently used Rapid Prototyping technology
- 13.(a). (i) With a block diagram, explain the various sub-systems and functions of a modern CNC controller.
(ii) Explain the following in CNC machining
 1. Linear interpolation
 2. Circular interpolation
 3. Cubic interpolation(OR)
(b) (i) What are the different types of contouring system in a CNC machine? Explain with neat sketches.

(ii) Explain various types of input devices used in modern CNC controller for loading programs.

14. (a). (i) Explain the code used for the following in CNC part program with example.

1. Circular interpolation in XY plane
2. Tool length compensation
3. Absolute programming

(ii) For the component shown in Fig Q 14 (a) ii, prepare the part program using ISO codes. Clearly indicate axis and the selection of datum point on the sketch of the part.

(OR)

(b). (i) Describe the function of a post processor in computer aided of part programming

(ii) For the shown fig Q 14 (b) ii, write part program using the APT language.

15. (a). (i) Briefly explain about production planning process in discrete part manufacturing

(ii) Explain the following

1. Master production scheduling
2. Resource requirement planning How are they related?

(OR)

(b). (i) Write about the approaches to be followed to achieve the goals of JIT.

(ii) Explain the various data required for a product Data Management system.

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