

W 2531

M.E. DEGREE EXAMINATION, JANUARY 2007.

Elective

CAD/CAM

CC 1722 — COMPUTER AIDED PROCESS PLANNING

(Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

State four major activities undertaken during process planning.

Give four prerequisites for the implementation of Group Technology in an industry.

Distinguish unilateral and bilateral tolerance on two aspects.

What are monocodes and polycodes? Illustrate with simple examples.

Distinguish variant and generative process planning systems on two aspects.

List the inputs for a CAPP.

List each two technical and economic factors to be considered in the implementation of CAPP.

State the factors influencing process planning in a batch processing industry.

Define and brief 'Data Structure'.

Name and brief any two types of reports generated through CAPP.

11. (a) (i) How is process planning related to production planning? What planning and control functions does it directly contribute? Discuss. (8)
- (ii) Bring out the significance of integrating design and manufacturing functions. How is this achieved? (8)

Or

- (b) (i) How will concurrent engineering help to reduce product development time? Elaborate with an example. (8)
- (ii) Discuss any four enabling tools of concurrent engineering. (8)
12. (a) (i) Show that Translation is commutative. Also show that Mirror and two-dimensional rotation about z-axis are not commutative. (8)
- (ii) How do you set the dimension variables for aligned dimensioning, unilateral dimensioning, chain dimensioning and explain how to indicate the tolerances on dimensions? (8)

Or

- (b) (i) What are the various files available in a CAD package? Discuss their functions. (8)
- (ii) Explain the significance of codification system for computer aided process planning. Also explain OPITZ system of codification. (8)
13. (a) (i) What are forward and backward process planning? Illustrate with an example for each. (8)
- (ii) Distinguish decision table and decision tree? Illustrate each with an example. (8)

Or

- (b) (i) What is process capability? Bring out the significance of process capability on product quality. (8)
- (ii) Discuss in detail any four input format for process planning. (8)
14. (a) Elaborate MIPLAN and PRO systems of CAPP with an example for each. (16)

Or

- (b) (i) Discuss the influence of production volume and number of production families on process design. (8)
- (ii) Distinguish APPAS and AUTOPLAN computer aided process planning systems on four aspects. (8)

- a) What is a totally integrated process planning system? Explain elaborately its various modules, with suitable examples. (16)

Or

- (b) Explain the following : (8 + 8 = 16)
- (i) Expert process planning.
 - (ii) Modular structure.
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