[4660] - 221

M.E. Mechanical (CADM & E) (Semester - II)
COMPUTER AIDED MANUFACTURING
(2012 Pattern)

Time : 3 Hours]   *[Max. Marks : 100*

Instructions to the candidates:

1) *Answers to the two sections should be written in separate answer books.*

2) *Attempt any three questions from each section.*

3) *Neat diagrams must be drawn wherever necessary.*

4) *Figures to the right indicate full marks.*

5) *Use of Electronic pocket Calculator is allowed.*

6) *Assume Suitable data, if necessary and mention it clearly.*

SECTION - I

Q1) a) Explain the basic elements of numerical control. **[6]**

b) Explain different types of automation used in production plant. **[6]**

c) Explain the modern maintenance and diagnostics systems used in automated systems. **[6]**

Q2) a) Explain numerical control ISO coding systems. **[8]**

b) Explain with neat block diagram the configurations of distributed numerical control. **[8]**

Q3) a) Explain different part programming formats. **[6]**

b) Write a complete NC part program for the component shown in Fig. 1, Draw the tool path and take raw material MS blank of 105 mm x 85 mm, spindle speed 300 RPM and feed 0.2 mm/rev. all dimensions are in mm.**[10]**
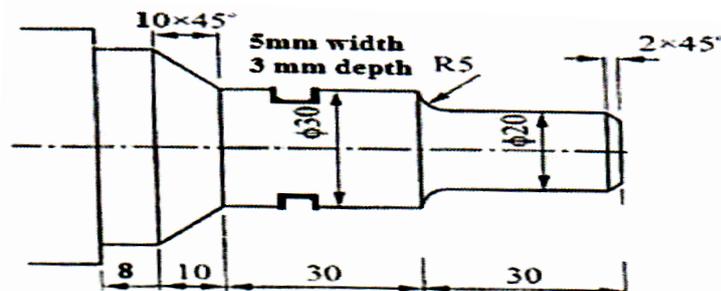

Fig.1.Q - No.3(b)

Q4) a) Explain the different types of motion commands used in APT programming. **[6]**

b) Write a complete APT part program to generate end profile for the component shown in. Fig 2. Use post processor call statement MACHINE MILL, Draw the tool path and take raw material stainless steel blank of 160 mm x 100 mm, spindle speed 400 RPM and feed 0.25 mm/rev. all dimensions are in mm
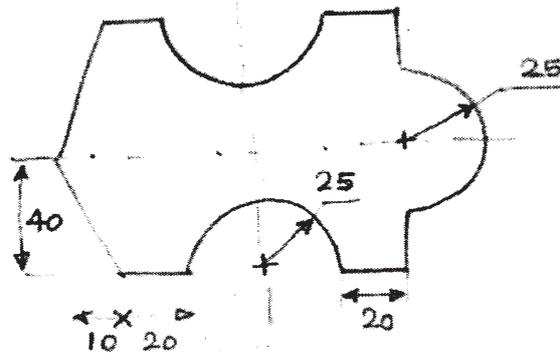

Fig.2.Q - No.4(b)

Q5) a) Explain the principle functions of DNC. **[8]**

b) Explain with neat block diagram of hard wired and soft wired configuration of a CNC. **[8]**

SECTION - II

Q6) a) Explain MI-CLASS part classification and coding systems used in group technology. **[10]**

b) Explain GT applications for manufacturing processes. **[8]**

Q7) a) Explain the components of FMS. **[10]**

b) Explain anyone FMS layout. **[6]**

Q8) a) Explain Esprit CIM – OSA model. **[8]**

b) Draw neat sketch Siemens concept of CIM applicable to manufacturing enterprise. **[8]**

Q9) a) Explain in brief types of process planning and discuss their merits over

each other. **[10]**

b) Explain the activities of production planning department. **[6]**

*Q10)*a) Write short notes on MRP - II. **[6]**

b) Explain with neat block diagram principle of EDM. **[5]**

c) Write short notes on CMM. **[5]**

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