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14MAR23

Second Semester M.Tech. Degree Examination, June/July 2015
Computer Control of Manufacturing Systems

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions.***

1 a. Explain functions of computer in CIMS. **(10 Marks)**

b. With block diagram, explain the product cycle with CAD/CAM. **(10 Marks)**

2 a. Explain with block diagram the structure of hydraulic system. **(10 Marks)**

b. Explain briefly counter with logic diagram and waveform. **(10 Marks)**

3 a. Explain the design consideration of NC machine tools. **(10 Marks)**

b. Explain with block diagram the ACO system. **(10 Marks)**

4 a. Explain the methods for improving machine accuracy in CNC machines. **(10 Marks)**

b. Explain the general configuration of DNC system with block diagram. State the difference between NC, CNC and DNC. **(10 Marks)**

5 a. Explain the different techniques of CAPP with block diagram. **(10 Marks)**

b. Explain the different types of sensors in Robotics. **(10 Marks)**

6 a. Explain the fundamental concept of MRP. Draw the structure of MRP system. **(10 Marks)**

b. Explain with neat sketches, the different type of robot joints. **(10 Marks)**

7 a. Explain various features of CNC machining centers. **(05 Marks)**

b. Write the advantages of CNC machines. **(05 Marks)**

c. Prepare the manual part program for CNC machining of a slot and holes in a mild steel plate for the following sketch.
Indicate the meaning of G and M codes.

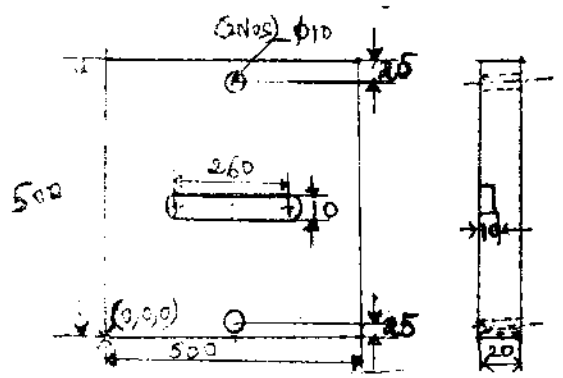

Fig. Q7(c)

Note: All dimensions are in mm. **(10 Marks)**

8 Write short notes any four of the following:
a) Automatic Tool changers.
b) Work cell interlock in Robots
c) Robot Applications
d) A CC system for turning
e) Incremental open loop control for PTP system
f) Machine vision. **(20 Marks)**

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