



GAA-10422

Seat No. _____

M. E. (Sem. II) (Mech.) (CAD/CAM) Examination

May / June - 2009

PGCC-201 : Computer Integrated Manufacturing

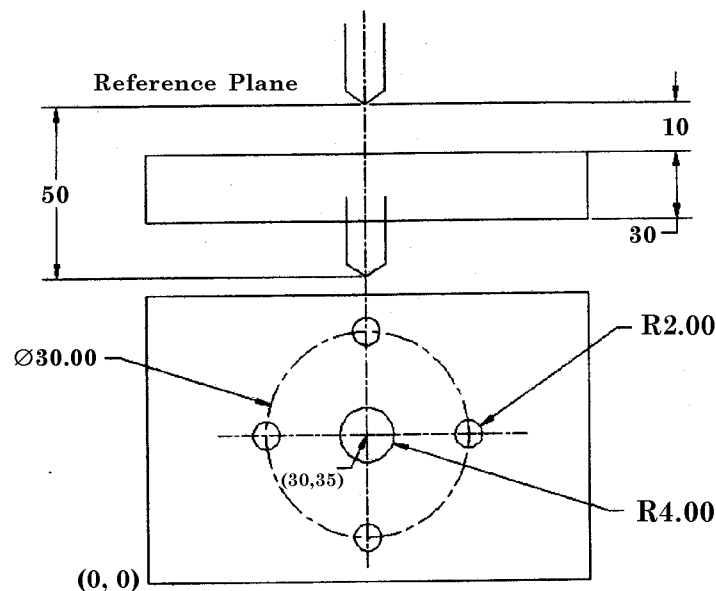
Time : 3 Hours]

[Total Marks : 100

- Instructions :**
- (1) Attempt all questions.
 - (2) Answers to the two sections must be written in separate answer books.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data if required, mention them clearly with full justification.

SECTION - I

- 1 (a) Prepare a manual part program to drill five holes by 16 CNC machine for the component as shown in figure using subroutine. The hole drilled with radius 2mm should be throughout and 4mm have depth up to 10mm.



- (b) With neat sketch explain axis designation of :
- (i) Horizontal CNC machine
 - (ii) CNC lathe.

OR

- 1 (a) Explain do loops in detail with suitable example of part program for CNC milling machine. **16**
(b) How sliding friction is converted into rolling friction in CNC machines ? Explain with neat sketch.
- 2 (a) State the factors which should be considered while selecting components for machinery on CNC machine tools. **16**
(b) What are the different statements used to write a part program using APT.
(c) Explain following terms :
(1) Fixed zero
(2) Full zero shift
(3) Full floating
- 3 Attend any three : **18**
(a) Linear position measuring transducer.
(b) Cutter radius compensation.
(c) Tape readers used in NC machines.
(d) Control system used in CNC PCB drilling machine.

SECTION - II

- 4 (a) Define AS/RS. Discuss different types of AS/RS used in FMS. **16**
(b) Explain in detail application of GT in FMS.
(c) Compare and contrast FMC and FMS.

OR

- 4 (a) State atleast two definitions of FMS. Describe various FMS layouts configuration with neat sketch. Select material handling system for different configurations. **16**
(b) Discuss on different types of pallet-part loading schemes used with four sided tombstones in machining centre.
(c) Explain in detail the automated features and capabilities of turing centre.

- 5 (a) Classify AGV on the basis of different guide ways, and explain any one of them in detail. 16
- (b) How many tools are there in magazine ? What are the different shapes of magazine ? Sketch the motion of ATC arm.
- (c) Explain in detail the tool monitoring and sensing system in FMS.
- 6 Attend any three : 18
- (a) Communications in CIM.
- (b) CAD to CAM integration.
- (c) Role of expert system in CM.
- (d) Need, importance and scope of CIM in Indian industry.
-