Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(Automation & Robotics) (2011 & Onwards) (Sem.–6)

COMPUTER INTERGRATED DESIGN AND MANUFACTURING

Subject Code : BTAR-604

Paper ID : [A2282]

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Answer briefly :

a) What do '*resolution*' of an graphics output device mean?

b) List the advantages of parametric curves.

c) Differentiate between wireframe model and solid model.

d) Sketch the coordinate system (showing the positive and negative directions) of a CNC lathe machine.

e) What is combined CNC/DNC machine?

f) What do CIM mean?

g) What is '*man-on-board*' type of AS/RS system?

h) Differentiate between '*storage capacity*' and '*storage density*' of a storage system.

i) Defining all the terms, give the preparatory code for peck-drilling operation on CNC milling machine using manual part programming.

j) Write the different codes used for radius compensation on CNC milling machine in manual part programming.

SECTION-B

2. Consider a circle with center point (20, 20) and radius as 15 units. Rotate this circle with an angle of 30° (*ccw*) about a point given by (40, 50). Thereafter zoom the resultant circle to double its size about the same point *i.e.*, (40, 50).

3. Differentiate between a NC and a CNC machine. Also discuss the different types of CNC machines.

4. Discuss the different components of a FMS.

5. What is a '*part family*' in group technology? What are the different methods used to convert a part into a family?

6. With a neat line sketch, discuss the working of LCD type of display device used in CAD.

SECTION-C

7. What is AGVS? What are the different technologies that are used in commercial system for vehicle guidance?

8. a) Discuss the different formats for writing the manual part program.

   b) What is the difference between the manual part programming and computer assisted part programming? What is the role of part programmer in computer assisted part programming?

9. Discuss in detail the B-rep type of modeling scheme used in CAD.