b. Explain the code structures of variant and generative process planning methods

7. Attempt any **one** : **(10×1=10)**

a. List the Boolean operations and explain their use in construction of a model with examples.

b. Elaborate on any three applications of robots in detail.

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(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 2290067 Roll No.

B.TECH

Regular Theory Examination (Odd Sem - VII),2016-17

COMPUTER AIDED DESIGN AND MANUFACTURING

Time : 3 Hours *Max. Marks : 100*

Note : Attempt **all** Section. If any data is missing then assume suitably.

Section - A

1. Attempt **all** question. **(2×10=20)**

a. What are the storage devices in CAD?

b. Discuss various component of NC machine

c. Explain the concept of cutter offeset in NC machining.

d. What are the different types of coading system used in Group Technology.

e. Discuss different types of sensor used in robot application.

f. What is the function of a robot end effector.

g. What are the advantage of CAPP?

h. List any for geometric command in APT

i. Differentiate between Incremental and Absolute system.

j. Define CIM.

Section - B

2. Attempt any **three** :   (10×3=30)

a. Describe all the 2-D transformation operation used in CAD.

b. Discuss a scheme for networking an integrated CAD/CAM system used in a foundry shop and machine shop.

c. With neat - sketch, explain all the feedback device used in CNC.

d. Discuss all the step is an engineering design process. What is the effect of computer in design?

e. Write an APT part program to perform milling operation of pockets. Assume suitable dimensions of the part and liat all the statement.

Section - C

3. Attempt any **one** :   (10×1=10)

a. What is sweeping solids? How is a sweep representation useful in creating 2½ objects? Explain.

b. What are half spaces? Give the definition of its base elements and explain.

4. Attempt any **one** :   (10×1=10)

a. Explain features of wireframe and solid models. List out their capabilities in Geometric modeling.

b. Explain features of following data exchange standard with their architecture:

    i.   DXF

    ii. PHIGS

5. Attempt any **one** :   (10×1=10)

a. What are the functions of design work station? Explain the two basic techniques used in current computer graphics terminals to generate image on CRT screen.

b. What are the steps in basic design process? Explain how CAD can improve the conventional design process.

6. Attempt any **one** :   (10×1=10)

a. Three holes of diameter 10 mm each are to be Drilled on a mildsteel plate of length 200mm, breadth 120 mm and thickness 12 mm. Use the lower left corner of the part as the origin in the XY system. The coordinate positions of the holes with respect to the origin are (40,25), (100, 60) and (160,25) respectively. The cutting speed is 50 m/min and feed 0.06 mm/rev. Write the manual part program to drill the holes in the Word address format. Use absolute positioning.