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B TECH
(SEM-VII) THEORY EXAMINATION 2020-21
CAD/CAM

Time: 3 Hours

Total Marks: 70

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

2 x 7 = 14

a.	List the differences between CAD/CAM.
b.	What is Bezier surface?
c.	Why B-rep modeling approach are widely followed than CSG approach.
d.	What is tool compensation?
e.	What is rapid prototyping?
f.	Explain the input and output devices in CAD.
g.	What is Robot? Discuss its various types.

SECTION B

2. Attempt any three of the following:

7 x 3 = 21

a.	Differentiate between constructive solid geometry and boundary representation.
b.	What is DNC system? How is it different from NC system?
c.	Explain the DDA line generation techniques for lines with different slopes. What are the limitations of DDA algorithms?
d.	Explain constructive solid geometry. What is the role of primitives and Boolean operations in CSG?
e.	What is transformation? Explain the terms; translation, rotation, scaling and reflection. Write their transformation also.

SECTION C

3. Attempt any one part of the following:

7 x 1 = 7

(a)	What is the basic principle of Rapid prototyping? Explain the general features of rapid prototyping techniques with examples.
(b)	What are NC machine tools? Discuss features, basic components, and co-ordinate system of NC machine tools.

4. Attempt any one part of the following:

7 x 1 = 7

(a)	A triangle with coordinate as A (5, 5), B (40, 40) and C (90, 10) is to be rotated about B(40,40) by 60° clockwise. Find out the transformed coordinates.
(b)	Discuss various types of quadric and super quadric surfaces available in the graphics package. What do you understand by the Blobby Objects?

5. Attempt any one part of the following:

7 x 1 = 7

(a)	What is FEM? Write its general procedure in engineering design. Also write the applications of FEM.
(b)	Define Bezier curve with suitable example and diagram. State its properties, merits and demerits.

6. Attempt any one part of the following:

7 x 1 = 7

(a)	Define robotics. Explain the laws that guide the Robots. How are robots classified?
(b)	Explain the importance of Adaptive control in machining operations. Also discuss various part classification and coding system used in GT.

7. Attempt any one part of the following:

7 x 1 = 7

(a)	What is CAPP and discuss the benefits of CAPP. Discuss various types of CAPP systems.
(b)	Discuss the types of manufacturing systems in CIMS. Also discuss various types of layout considerations of FMS.