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B-TECH
(SEM V) THEORY EXAMINATION 2021-22
COMPUTER INTEGRATED MANUFACTURING

Time: 3 Hours

Total Marks: 100

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

SECTION A

1. Attempt all questions in brief.

2 x 10 = 20

a.	Define NURBS?
b.	What are the factors should be considered in selection of tooling for CNC?
c.	What is master production schedule (MPS)?
d.	Give principle of an automated storage and retrieval system.
e.	What are the benefits of CAPP over manual process?
f.	Name the relationship between CAD and CAM?
g.	Write short note on point plotting in computer graphics.
h.	List different types of material handling equipments that is commonly employed in FMS.
i.	What is a Need of rapid prototyping?
j.	Write short note on Industry 4.0.

SECTION B

2. Attempt any three of the following:

10 x 3 = 30

a.	Define Group Technology (GT) List the various benefits of implementing a GT in a firm. Also bring out the advantages and limitation of using GT.
b.	What are the different types of robot configurations available? Write its relative merits, demerits and applications.
c.	Briefly discuss about the B-Spine and Bezier curves.
d.	Express how does IT facilitate concurrent engineering?
e.	List the two approaches commonly used in CAPP systems bringing out their advantages and limitations.

SECTION C

3. Attempt any one part of the following:

10x 1 = 10

a.	Define Automation. Explain the various levels of Automation in detail.
b.	Explain the computerized elements of CIM system.

4. Attempt any one part of the following:

10x 1 = 10

a.	Write the difference between wireframe ,surface and solid modeling technique in CAD.
b.	Draw a circle using Bresenham's Circle drawing algorithm with centre (-3, 8) and radius 12 units.

5. Attempt any one part of the following:

10x 1 = 10

a.	List the advantage of computer aided part programming .What factors must be considered in selection of programming system? Discuss in detail.
b.	What are the problems that are associated with conventional NC? How can be it overcome in CNC?

6. Attempt any one part of the following:

10x 1 = 10

a.	Explain in detail about robot programming concepts.
b.	Explain planning, Design and operation issues in FMS.

7. Attempt any one part of the following:

10x 1 = 10

a.	Write short note on (i) AGV (ii) Capacity planning.
b.	Explain different types of Rapid prototyping techniques available explain in detail also write its application area.