Printed Pages: 02 **Sub Code: KME-051**

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B. TECH.
(SEM V) THEORY EXAMINATION 2022-23
COMPUTER INTEGRATED MANUFACTURING

Time: 3 Hours ***Total Marks: 100***

Note: Attempt all Sections. If you require any missing data, then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2x10 = 20

(a) What are the essential needs of CIM?
(b) Differentiate between analytic surfaces and synthetic surfaces
(c) What do you mean by BLOBBY OBJECTS?
(d) Explain the term HALF SPACES
(e) Differentiate G and M codes.
(f) Discuss is the purpose of canned cycles?
(g) State the main objectives of FMS.
(h) What are the objectives of MRP system?
(i) Define the term stereo lithography.
(j) Define the meaning Tessellation?

SECTION B

2. Attempt any *three* of the following: 10x3 = 30

(a) Explain the five levels of automation
(b) Illustrate the concept of B-rep approach of solid modelling with example
(c) List any five important factors to be considered while designing guide ways
(d) Explain with neat sketch AS/RS system used in FMS
(e) Examine with a neat sketch the working principle of fused deposition modelling process

SECTION C

3. Attempt any *one* part of the following: 10x1 = 10

(a) List any ten strategies for automation and production systems
(b) Compare between fixed, programmable and flexible automation system

4. Attempt any *one* part of the following: 10 x1 = 10

(a) Using Bresenham's line algorithm, calculate the pixel positions along the line between end points (15, 8) and (28,16).
(b) Classify and compare continuities in curve modeling

5. Attempt any *one* part of the following: 10x1 = 10

(a) Sketch and explain the general configuration of Direct Numerical Control (DNC) system

(b) List any five advantages of automatic tool changer (ATC).

6. Attempt any *one* part of the following: 10x1 = 10

(a) Explain the classification and coding system in Group Technology

(b) With block diagram, explain developing a retrival type of computer aided process planning and generative type of computer aided process planning

7. Attempt any *one* part of the following: 10x1 = 10

(a) Compare SCARA Robot configuration with other configurations

(b) Examine the Classification of the different types of rapid prototyping techniques. Explain the Stereo lithography techniques with neat sketch