PAPER ID-310222

**Roll No:** | | | | | | | | | | | | | |

**BTECH**
**(SEM V) THEORY EXAMINATION 2023-24**
**COMPUTER INTEGRATED MANUFACTURING**

**TIME: 3 HRS**                                                                **M.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**

| Q no. | Question | Marks | CO |
|---|---|---|---|
| a. | Discuss characteristics of fixed Automation. | 2 | 1 |
| b. | Differentiate between analytic surfaces and synthetic surfaces. | 2 | 1 |
| c. | What do you mean by Surface of revolution? | 2 | 2 |
| d. | Explain the term Tabulated cylinder. | 2 | 2 |
| e. | Differentiate between G01 and G02 codes. | 2 | 3 |
| f. | Discuss the purpose of MACRO statement. | 2 | 3 |
| g. | What do you mean by quadric surfaces? | 2 | 4 |
| h. | Describe the meaning of manipulator. | 2 | 4 |
| i. | Define the term slicing. | 2 | 5 |
| j. | Define the meaning of TEACH PENDANT. | 2 | 5 |

### SECTION B

**2.** **Attempt any *three* of the following:**

| Q no. | Question | Marks | CO |
|---|---|---|---|
| a. | Explain the concept of Automation Migration Strategy. | 10 | 1 |
| b. | Translate the polygon with co-ordinates A(2,5),B(7,10) and C(10,2) by 3 units in x direction and 4 units in y direction. | 10 | 2 |
| c. | Explain the classification and coding system in Group Technology. | 10 | 3 |
| d. | Compare SCARA Robot configuration with other configurations. | 10 | 4 |
| e. | Explain the variant type of computer aided process planning. | 10 | 5 |

### SECTION C

**3.** **Attempt any *one* part of the following:**

| Q no. | Question | Marks | CO |
|---|---|---|---|
| a. | Classify & explain different levels of Automation. | 10 | 1 |
| b. | Explain advantages and disadvantages of implementing Computer Integrated Manufacturing. | 10 | 1 |

**4.** **Attempt any *one* part of the following:**

| Q no. | Question | Marks | CO |
|---|---|---|---|
| a. | Illustrate the following terms related to surface modelling (a) BLOBBY OBJECTS (b) HALF SPACES | 10 | 2 |
| b. | Explain difference between DDA & Bresenham line drawing algorithm. | 10 | 2 |

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**5.** **Attempt any *one* part of the following:**

| Q no. | Question | Marks | CO |
|---|---|---|---|
| a. | Discuss in detail with neat sketches difference between CNC & DNC system. | 10 | 3 |
| b. | Differentiate between linear and circular interpolation. Also differentiate between absolute and incremental programming. | 10 | 3 |

**6.** **Attempt any *one* part of the following:**

| Q no. | Question | Marks | CO |
|---|---|---|---|
| a. | Illustrate and explain role of group technology and Just in time (JIT) in Flexible manufacturing system (FMS). | 10 | 4 |
| b. | Examine different methods of robot programming. | 10 | 4 |

**7.** **Attempt any *one* part of the following:**

| Q no. | Question | Marks | CO |
|---|---|---|---|
| a. | Explain with a neat sketch the working of Automated storage and retrieval system (AS/RS). | 10 | 5 |
| b. | Explain with a neat sketch the working principle of fused deposition modelling process. | 10 | 5 |