| Roll No. | | | | | | | | | | | | |
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# PRESIDENCY UNIVERSITY

**BENGALURU**

## Mid - Term Examinations – October 2025

**Date:** 09-10-2025 **Time:** 09.30am to 11.00am

| | | |
|---|---|---|
| **School:** SOE | **Program**: B. Tech | |
| **Course Code:** MEC3034 | **Course Name:** Computer Integrated Manufacturing | |
| **Semester**: V | **Max Marks**:50 | **Weightage**:25% |

| **CO - Levels** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** |
|---|---|---|---|---|---|
| **Marks** | **26** | **24** | **-** | **-** | **-** |

**Instructions:**

*(i) Read all questions carefully and answer accordingly.*

*(ii) Do not write anything on the question paper other than roll number.*

## Part A

**Answer ALL the Questions. Each question carries 2marks.** **5Q x 2M=10M**

| | | | | |
|---|---|---|---|---|
| **1** | What are the challenges in Computer integrated manufacturing (CIM) | 2 Marks | L1 | CO1 |
| **2** | What do understand by the term “CIMOSA”? | 2 Marks | L1 | CO1 |
| **3** | What is “utilization” with respect to production facility? | 2 Marks | L1 | CO1 |
| **4** | What are transducers? | 2 Marks | L1 | CO2 |
| **5** | What are the advantages of stepper motor used in CNC machine | 2 Marks | L1 | CO2 |

## Part B

**Answer the Questions.** **Total Marks 40M**

**Answer ALL Questions. Each question carries 10 marks.** **4QX10M=40M**

| | | | | | |
|---|---|---|---|---|---|
| **6** | **a.** | The furred lathe section has 10 machines, all devoted to the productions of the same part. The section operates 10shifts/wk. The number of hours’/shift averages 9.0. average production rate of each machine is 22 units/hr. determine the weekly production capacity of the turrets lathe section. Actual production is 8500 units/week. Find out the utilization of | 5 Marks | L3 | CO1 |

| | | | | | |
|---|---|---|---|---|---|
| | | machine | | | |
| | **b.** | Different automation systems are used in manufacturing sector to suit production demand. Discuss how Fixed automation differs from the flexible automation | 5 Marks | L2 | CO1 |
| | | **Or** | | | |
| **7** | **a.** | The Turret lathe section has 12 machines, all devoted to the productions of the same part. The section operates 11 shifts/wk. The number of hours/shift averages 10. average production rate of each machine is 25 units/hr. determine the weekly production capacity of the turrets lathe section. Actual production is 11000 units/week. Find out the utilization of machine | 5 Marks | L3 | CO1 |
| | **b.** | List out the reason for implementing automation in manufacturing industries? | 5 Marks | L2 | CO1 |
| **8** | | CIM system uses different computer techniques to manufacture a product. Explain any five components/elements of CIM that are used in any organization. | 10Marks | L2 | CO1 |
| | | **Or** | | | |
| **9** | | Computer aided techniques were used in CIM will have greater impact on production and quality of products. Explain in brief the following techniques<br>(a) Computer Aided drawing (CAD)<br>(b) Computer aided Engineering (CAE)<br>(C) Enterprise resource planning (ERP) | 10Marks | L2 | CO1 |
| **10** | **a.** | Differentiate between AC & DC servo motor | 5Marks | L2 | CO2 |
| | **b.** | Briefly explain the major features of CNC machines | 5 Marks | L2 | CO2 |
| | | **Or** | | | |
| **11** | | Explain the working principle of CNC machine with block diagram with its advantages | 10 Marks | L2 | CO2 |
| **12** | | Explain the working principle of DC servo motor with its advantages and limitations | 10 Marks | L2 | CO2 |
| | | **Or** | | | |
| **13** | | With simple sketch explain the working of Stepper motor with its limitations | 10Marks | L2 | CO2 |