**TED (21)3023**
**(Revision – 2021)**

**2110220185**

**Reg. No……**
**Signature…….**

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2024**

# MACHINE TOOLS

[Maximum Marks: **75**] [Time: **3** Hours]

## PART-A

**I. Answer '*all*' the following questions in one word or one sentence. Each question carries *'one'* mark.**

**(9 x 1 = 9 Marks)**

| | | Module Outcome | Cognitive level |
|---|---|---|---|
| 1. | The angle formed between the tool face and line parallel to the base is called ---------- angle. | M1.01 | U |
| 2. | Name any two types of lathes. | M1.04 | R |
| 3. | Name any one work holding device used in planer. | M2.01 | R |
| 4. | Name the tool used for finishing or expanding drilled, bored, or cored holes to give a good finish and an exact dimension. | M2.04 | R |
| 5. | List any two indexing methods used in milling. | M3.01 | R |
| 6. | Name any two natural abrasives. | M3.04 | R |
| 7. | In a NC machine, the detailed step by step commands that direct the machine tool is called ----------. | M4.01 | U |
| 8. | Write any two applications of CNC machines. | M4.02 | U |
| 9. | Write any two applications of cutting fluids. | M4.05 | U |

## PART-B

**II. Answer any '*eight*' questions from the following. Each question carries *'three'* marks.**

**(8 x 3 = 24 Marks)**

| | | Module Outcome | Cognitive level |
|---|---|---|---|
| 1. | Differentiate between orthogonal and oblique cutting processes. | M1.01 | U |
| 2. | For a machining system, the cutting speed is 20 m/min, Taylors exponent is 1 and the Taylors coefficient is 2000. Find the tool life in minutes. | M1.03 | U |
| 3. | List three work holding devices used in slotting machine. | M2.05 | R |
| 4. | Explain the working principle of a shaper. | M2.01 | U |
| 5. | Give the specifications of a drilling machine. | M2.03 | U |
| 6. | Write short note on centreless grinding. | M3.02 | U |
| 7. | Explain lapping process. | M3.03 | U |
| 8. | Explain closed loop control system. | M4.03 | U |
| 9. | State the applications of NC machines. | M4.03 | U |
| 10. | List the classification of cutting fluids. | M4.03 | R |

## PART-C

**Answer '*all*' questions from the following. Each question carries *'seven'* marks.**

**(6 x 7 = 42 Marks)**

| | | Module Outcome | Cognitive level |
|---|---|---|---|
| III. | Describe tool nomenclature for a single point cutting tool. | M1.02 | U |
| | **OR** | | |
| IV. | Explain the types of operations that can be performed in a lathe. | M1.05 | U |
| V. | Explain taper turning by compound rest method. | M1.05 | U |
| | **OR** | | |
| VI. | Sketch and label different parts of a centre lathe. | M1.04 | R |
| VII. | Explain crank and slotted lever mechanism in shaper. | M2.01 | U |
| | **OR** | | |
| VIII. | Sketch and label different parts of a radial drilling machine. | M2.01 | R |
| IX. | Discuss the various types of milling cutters used in milling machines. | M3.03 | U |
| | **OR** | | |
| X. | Explain different bonds used for making grinding wheels. | M3.03 | U |
| XI. | Explain different tool holding devices used in milling machines. | M3.03 | U |
| | **OR** | | |
| XII. | Sketch and label different parts of a horizontal milling machine. | M3.05 | R |
| XIII. | Explain the classification of NC machines based on motion control. | M4.01 | U |
| | **OR** | | |
| XIV. | Describe the properties of cutting fluids. | M4.03 | U |

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