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Reg. No……
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2025

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.	Write Taylor's tool life equation.	M1.03	R
2.	Name the lathe operation in which material is removed from the end of a workpiece that is perpendicular to the axis.	M1.05	U
3.	In shaper the cutting stroke is carried out at slow speed and the return stroke is carried at high speed with the help of---------- mechanism.	M2.01	R
4.	---------- is a multipoint tool used for making round holes in workpieces.	M2.04	U
5.	Name any one tool holding device used in milling.	M3.03	R
6.	A grinding wheel consists of a large number of -------- particles, called grains, held together by a suitable agent.	M3.03	U
7.	CNC stands for ----------	M4.01	R
8.	Name any one component of a NC machine.	M4.02	R
9.	By using ---------- the friction between the tool and the workpiece and the heating during the cutting operation can be reduced.	M4.04	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.	Explain different types of chips formed during machining.	M1.01	U
2.	List the classification of lathe.	M1.04	R
3.	List different types of shaping machines.	M2.01	R
4.	Briefly explain the reaming process.	M2.04	U
5.	List the uses of a slotting machine.	M2.05	R
6.	Describe simple indexing method.	M3.03	U
7.	Explain the principle of metal removal by grinding.	M3.04	U
8.	Name basic components of a NC machine.	M4.02	R
9.	Describe open loop control system.	M4.02	U
10.	Explain the properties of cutting fluids or lubricants.	M4.04	U

PART-C

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

(6 x 7 = 42 Marks)

		Module Outcome	Cognitive level
III.	Compare orthogonal and oblique cutting processes.	M1.01	U
	OR		
IV.	Sketch and label different parts of a lathe.	M1.04	R
V.	Draw three views of single point cutting tool showing various angles and elements.	M1.02	R
	OR		
VI.	Explain the taper turning process by tailstock setover method.	M1.05	U
VII.	Explain the various operations performed in drilling machines.	M2.04	U
	OR		
VIII.	Sketch and label different parts of a slotting machine.	M2.05	R
IX.	Distinguish between up milling and down milling processes.	M3.01	U
	OR		
X.	Explain the tool signature of a plain milling cutter with suitable diagrams.	M3.03	U
XI.	Describe the various types of abrasives used for grinding.	M3.04	U
	OR		
XII.	Explain the processes of Honing and Lapping.	M3.05	U
XIII.	Compare NC and CNC machines.	M4.03	U
	OR		
XIV.	Explain the significance of cutting fluids / lubricants used in machining.	M4.05	U

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