Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Supplementary Examinations December-2021
MACHINE TOOLS
(Mechanical Engineering)

Time: 3 hours   Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	Distinguish the cutting process with neat sketches.	L2	12M

OR

2	a	Derive the equation for chip thickness ratio and shear plane angel.	L4	6M
	b	What factors influence the formation of the built up edge and give the factors to decrease the built up edge?	L3	6M

UNIT-II

3	a	Explain various forces acting on a chip.	L2	6M
	b	Derive an equation for shear strain from velocity relations.	L3	6M

OR

4	Discuss tool failure and wear mechanism in cutting tool.	L3	12M

UNIT-III

5	a	Name the different types of lathe operations? Explain about facing and knurling with neat sketches.	L2	6M
	b	What are the different types of taper turning methods? Discuss any one method with suitable diagram.	L1	6M

OR

6	Name the different types of the lathes? Discuss the importance of the each lathe.	L2	12M

UNIT-IV

7	a	What do you understand by the term "Boring"? How are boring machines classified?	L1	6M
	b	Discuss briefly, with a neat sketch, a horizontal boring machine.	L1	6M

OR

8	a	Explain briefly Up-milling process and Down milling process	L2	6M
	b	Give the comparison between planer, shaper and slotter	L2	6M

UNIT-V

9	a	Define the terms: i) Grinding ii) Rough Grinding iii) Precision Grinding	L1	6M
	b	What is a 'bond'? Name and explain principal bonds.	L2	6M

OR

10	a	Define and explain the terms i) Jig ii) Fixture with its uses.	L1	6M
	b	What are the advantages, limitations and applications of broaching?	L2	6M

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