

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech III Year I Semester Supplementary Examinations June-2024

MACHINE TOOLS

(Mechanical Engineering)

Time: 3 Hours

Max. Marks: 60

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

UNIT-I

1 Explain the formation of chip. Discuss the types of chips with neat sketches. CO1 L2 12M

OR

2 a How can you classify cutting tools? CO1 L1 6M
b Define the single point cutting tool elements. CO1 L1 6M

UNIT-II

3 a Explain work done in metal cutting process. CO2 L2 6M
b Explain cutting speed, feed, and depth of cut. CO2 L2 6M

OR

4 Discuss tool failure and wear mechanism in cutting tool. CO2 L2 12M

UNIT-III

5 a Name the different types of lathe operations? Explain about facing and knurling with neat sketches. CO3 L2 6M
b What are the different types of taper turning methods? Discuss any one method with suitable diagram. CO3 L2 6M

OR

6 What are the differences between a Turret and a Capstan lathe? CO3 L1 12M

UNIT-IV

7 a Write short notes on (i) Face milling (ii) Straddle milling and (iii) End milling. CO4 L1 6M
b Explain briefly plain indexing and differential indexing with suitable example. CO4 L1 6M

OR

8 a What is a shaper? What is the working principle and specification of a shaper? CO4 L1 6M
b How are shapers classified? State the advantages, limitations and applications of shaper. CO4 L2 6M

UNIT-V

9 With a neat sketch, explain construction and working of tool and cutter grinding machine. CO5 L2 12M

OR

10 a What is a 'grinding wheel'? What are the grinding wheel parameters that influence the grinding performance? CO5 L1 6M
b What is a 'bond'? Name and explain principal bonds. CO5 L1 6M

*** END ***

