



Reg. No. :

Name :

Fifth Semester B.Tech. Degree Examination, January 2018
(2013 Scheme)
13.505 : MACHINE TOOLS (MN)

Time : 3 Hours

Max. Marks : 100

Instruction : Answer *all* questions from Part – A and *any one* question from *each* Module of Part – B.

PART – A

1. What is orthogonal cutting ? Give an example to orthogonal cutting.
2. Define Machinability. What are the factors affecting machinability ?
3. List out the important characteristics of a cutting tool.
4. Sketch a single point cutting tool and write the tool signature.
5. Mention the different methods of work holding on lathe.
6. Compare hydraulic and mechanical shaper machine.
7. Illustrate centreless grinding.
8. Name four types of milling operations and the cutters used for each operation.
9. Define Dressing and Truing of grinding wheels.
10. What is indexing ? Name an application for work indexing. **(10×2=20 Marks)**

PART – B
Module – 1

11. a) Explain Chip formation and types of chips. 10
b) Explain major wear on a single point cutting tool with neat sketch. 10
12. a) Explain the factors affecting tool life. 5
b) Discuss about the optimization of machining process. 15

P.T.O.



Module – 2

- 13. a) Draw and explain the taper turning attachment of a lathe machine. 10
- b) Explain the quick return mechanism of shaper. 10
- 14. a) Explain the working of an automatic lathe. 5
- b) Explain the automatic thread cutting operation with neat sketch. 15

Module – 3

- 15. a) Explain the gear cutting operation in a milling machine with sketch. 10
- b) Explain the geometry of a plain milling cutter. Explain various types of milling cutters. 10
- 16. a) Explain fabrication of grinding wheel. How a grinding wheel is specified. 10
- b) Compare up milling and down milling with sketches. 10

Module – 4

- 17. a) Explain Ultra sonic Machining. Name two specific applications. 15
 - b) Compare ECM and EDM. 5
 - 18. a) Explain Hydro forming with sketch. 15
 - b) Compare AJM and AWJM. 5
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