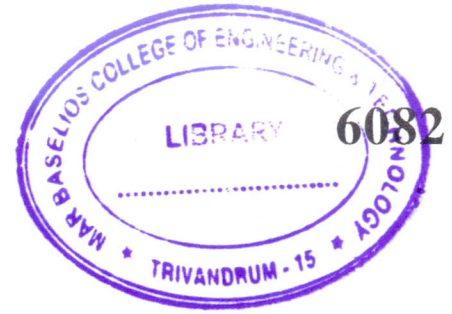




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Reg. No. :

Name :

**Fifth Semester B.Tech. Degree Examination, November 2011
(2008 Scheme)
08.505 : MACHINE TOOLS (MN)**

Time : 3 Hours

Max. Marks : 100

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

PART – A

(4 marks each)

1. Explain the mechanism of chip formation.
2. Explain the function of chip breakers.
3. Define tool life. What is the relation between tool life and the cutting speed ?
4. Explain the working principle of a shaper.
5. What is meant by grinding wheel loading ? How it can be avoided ?
6. Name different types of chucks used on lathe and state the advantage of each.
7. Differentiate between up milling and down milling.
8. What are the functions of dielectric fluid in EDM ? Name the common dielectric fluid.
9. List any four advantages of the powder metallurgy process.
10. Explain the principle of working of EBM. **(10×4=40 Marks)**

PART – B

Module – I

11. a) Define the important angles of a typical turning tool. Sketch the tool and mark the angles. What is tool signature according to ASA system ? **10**
- b) Name different types of chips produced in metal cutting. Explain the cutting conditions favorable for the formation of each type. **10**

OR

P.T.O.



12. a) Draw a sketch indicating the machining force diagram proposed by Ernst and merchant. 10
- b) An orthogonal tool having a rake angle of 12° is to machine C-20 steel. The feed rate is 0.25 mm/rev. The shear angle is found to be 30° . Determine the value of the cutting ratio for a principal cutting edge angle of 90° . 10

Module – II

13. a) Describe the common methods of taper turning on a centre lathe. 10
- b) Explain the turret indexing mechanism with a neat sketch. 10

OR

14. a) What are the essential factors to be considered while selecting a grinding wheel? How dressing is done in grinding wheels? 10
- b) Describe the Apron mechanism of a lathe with sketches. 10

Module – III

15. a) Explain electron beam machining with sketches and explain the process parameters. 10
- b) What are transfer machines? Describe the various types. What are the advantages, limitations and applications? 10

OR

16. a) With neat sketches discuss about the USM system. Explain the variables which affect the MRR. 10
- b) Explain the process of production of carbide inserts following P/M route of fabrication. 10