

Reg. No. :

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R 3452

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2007.

Third Semester

(Regulation 2004)

Mechanical Engineering

ME 1203 — MANUFACTURING TECHNOLOGY — II

(Common to B.E. (Part-Time) Second Semester Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL the questions.

PART A — (10 × 2 = 20 marks)

1. Give two examples for orthogonal cutting.
2. What are the four important characteristics of materials used for cutting tools?
3. Why is it essential that the cutting point of the tool should be level with the spindle centre while machining taper on a work-piece?
4. What is the difference between a ram-type turret lathe and saddle type turret lathe?
5. Under what conditions planning operation would be preferred over other machining processes like milling, broaching, shaping, etc?
6. What are the common work holding devices used on milling machines?
7. What for lapping is used?
8. State the abrasives used in the manufacture of grinding wheels.
9. What is the difference between incremental and absolute system?
10. What is the role of computer for NC machine tool?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the conditions that promote the formation of the following types of chip :
- (i) Continuous chips without Builtup edge. (5)
 - (ii) Continuous chips with Builtup edge. (5)
 - (iii) Discontinuous chips. (6)

Or

- (b) (i) Define the various tool parts of a single point cutting tool with a neat sketch. (6)
- (ii) What are the standard angles of cutting tool? Illustrate with an example. (10)
12. (a) (i) Describe some of the methods and equipments for holding work on a lathe. (8)
- (ii) Explain any four commonly used attachments on lathe. (8)

Or

- (b) (i) Briefly explain the principle of working of the sliding head type single spindle automatic machine. (8)
- (ii) Describe with a neat sketch a turret automatic screw machine. (8)
13. (a) (i) State the advantages of Ward-Leonard drive. (6)
- (ii) Explain with a sketch "Fast and Loose pulleys" quick return mechanism of a planer table. (10)

Or

- (b) (i) State the methods of holding milling cutters. (4)
- (ii) Explain Simple indexing, Compound indexing and differential indexing with suitable example. (12)

14. (a) (i) State the advantages and limitations of broaching. (8)
(ii) Compare gear hobbing with gear shaping. (8)

Or

- (b) (i) Explain self-sharpening characteristics of grinding wheel. (5)
(ii) Describe the use of cutting fluids in grinding. (5)
(iii) Explain wheel truing and dressing. (6)
15. (a) (i) State a few typical applications where the use of numerical control would be justified. (8)
(ii) Describe in brief the basic components of a tape-operated NC machine tool. (8)

Or

- (b) (i) Discuss the advantages of computer numerical control system. (8)
(ii) What is the difference between positioning machines and contouring machines? (8)
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