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Question Paper Code : C 1368

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2010.

Third Semester

Mechanical Engineering

ME 1203 — MANUFACTURING TECHNOLOGY – II

(Regulation 2004)

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

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How is metal removed in metal cutting?
2. What is meant by built-up-edge (BUE)?
3. How is thread chased in a Lathe?
4. List the three most commonly employed types of single spindle automatics.
5. How are work pieces held in a shaper?
6. What are the various types of end mills used in milling?
7. How is grinding different from other machining operations?
8. What is the difference between forming and generation of gears with respect to the principle?
9. Show the axes of a CNC horizontal Boring Machine.
10. What are the basic assumptions made while programming in APT language?

PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the various forms of wear found in cutting tools? Show with a neat sketch. (6)
- (ii) How do the cutting process parameters affect the cutting tool wear in single point tools? (10)

Or

- (b) (i) Derive the expression for shear angle in orthogonal cutting in terms of rake angle and chip thickness ratio. (6)
- (ii) How do you define tool life? Explain the parameters that control the tool life of a single point cutting tool. (10)
12. (a) What are the various methods available for taper turning in a lathe? Explain their specific advantages and limitations. (16)

Or

- (b) Give a sketch illustrating the principle of operation of the Swiss-type automatic. (16)
13. (a) (i) Compare a shaper and planer in terms of their operation and type of work pieces. (6)
- (ii) Write a small note on slotting machines. (10)

Or

- (b) What are the differences between compound indexing and differential indexing? Explain the relative merits. (16)
14. (a) Describe a grinding wheel structure with the help of a neat sketch and state different bonding and abrasive materials used in it. What would you like as an abrasive for grinding steel? (16)

Or

- (b) Compare gear shaping and gear hobbing, giving the process and product requirements. (16)

15. (a) Describe the main features of CNC machines, which distinguish them from conventional machine tools. (16)

Or

- (b) (i) How is cutter compensation given in the case of a machining centre? Explain it with an example. (8)
- (ii) Describe the functions of a post processor. (8)
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