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T 3343

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2008.

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 questions.

PART A — (10 × 2 = 20 marks)

1. List out the difference between orthogonal cutting and oblique cutting.
2. Write short notes on flank wear and crater wear of a single point cutting tool?
3. State the need for tumbler gear mechanism.
4. Differentiate capstan and turret lathe.
5. Mention the difference between shaper and planer.
6. List out the situation where reaming operation is required.
7. Compare and contrast the gear generation process with gear forming process.
8. A grinding wheel is specified as A 24 K 7 V. What does each letter indicates?
9. Differentiate between fixed zero and floating zero in CNC terminology.
10. Write short notes on point to point interpolation system.

PART B — (5 × 16 = 80 marks)

11. (a) (i) The life of a turning tool obtained was 40 minutes and 25 minutes at cutting speed 80 m/min and 100 m/min respectively. Determine the tool life at 40 m/min and 120 m/min. (10)
- (ii) State the functions of cutting fluids and their types. (6)

Or

- (b) Draw the Merchant's circle and derive the relationship between various cutting forces. (16)
12. (a) Discuss any four work holding devices applicable in lathe. (16)

Or

- (b) Explain turret indexing mechanism and bar feeding mechanism applied in automatic lathe? (16)
13. (a) (i) Describe with a neat sketch, the quick return mechanism of a shaper. (10)
- (ii) Explain the various drill holding devices. (6)

Or

- (b) (i) Differentiate the up milling from down milling process. (4)
- (ii) Discuss about index milling, screw thread milling and end milling operation. (12)
14. (a) (i) Discuss the three types of feed in centreless grinding machine. (10)
- (ii) Explain about the glazing and dressing of a grinding wheel. (6)

Or

- (b) (i) Explain the principle of broaching operation with neat sketch. (6)
- (ii) Draw and explain the broach tool. (10)

15. (a) (i) Discuss the importance of slant bed CNC lathe? (4)
(ii) Write short notes on Tool magazine, Automatic tool changer and Palette. (12)

Or

- (b) (i) Explain the APT system configuration with a neat block diagram. (8)
(ii) Write the part program for the workpiece shown in figure 1. (8)

Material : Aluminum

Workpiece Size : 100 mm × 80 mm × 15 mm

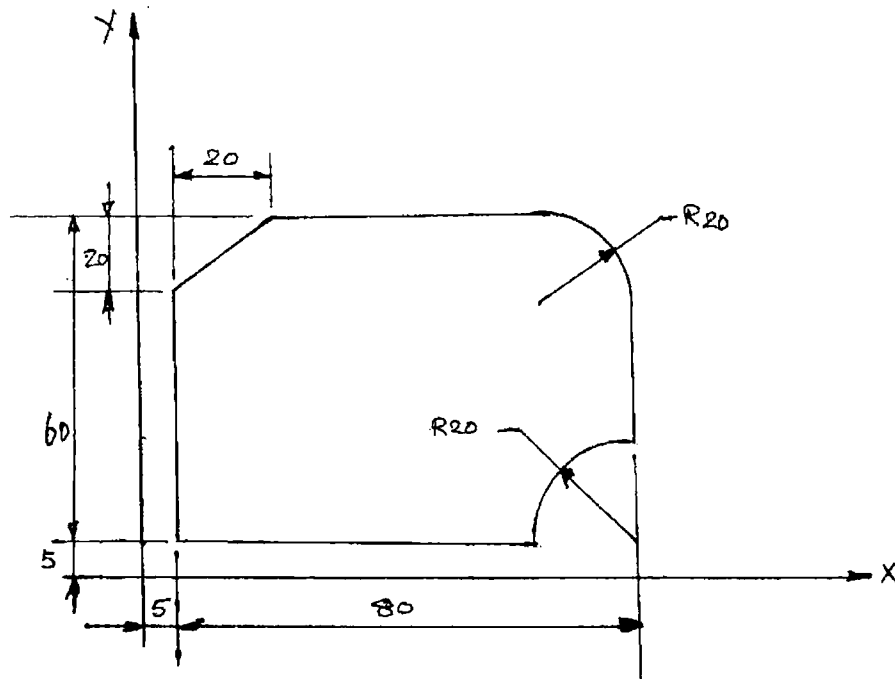


Fig. 1.