Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 21850

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Fourth Semester

Mechanical Engineering

ME 2252/ME 43/ME 1252 A/080120016/10122 ME 403 — MANUFACTURING TECHNOLOGY – II

(Common to Industrial Engineering, Industrial Engineering and Management, Mechanical and Automation Engineering and Mechanical Engineering (Sandwich) for Sixth Semester

(Regulations 2008/2010)

(Also Common to PTME 2252/10122 ME 403 Manufacturing Technology II for B.E. (Part-Time) Third Semester Mechanical Engineering – Regulations 2009/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define chip thickness ratio.

2. State the desired characteristics of cutting tool materials.

3. Name the cutting tool nomenclature of single point tool.

4. Mention the work holding and supporting devices used in lathe.

5. What is an arbor?

6. How does a vertical shaper differ from a slotter?

7. State the differences between push and pull broaching.

8. Name the indexing methods.

9. List the feed drives used in CNC machine tools.

10. State the differences between NC and CNC machine tool.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Derive the expression of chip reduction coefficient. (8)

(ii) Discuss the purpose of cutting fluids. (8)

Or

(b) (i) Describe the factors affecting tool life. (8)

(ii) Draw the merchant force diagram and explain the forces acting it. (8)

12. (a) (i) Explain the different machining operations performed on lathe with sketches. (8)

(ii) Name the taper turning methods and explain any two with sketches. (8)

Or

(b) (i) How does a Turret lathe differ from a Capstan lathe? Explain. (8)

(ii) Discuss the features of single spindle and multi-spindle automatic lathes. (8)

13. (a) (i) What is a boring bar? Describe its utility. (8)

(ii) Describe any one type of quick return mechanism used in shaper with neat sketches. (8)

Or

(b) (i) Explain various milling processes with illustrative sketches. (8)

(ii) Differentiate between reciprocating saw and band saw. (8)

14. (a) (i) Discuss the factors influencing the selection of grinding wheel. (8)

(ii) Explain the centreless grinding operations with sketches. (8)

Or

(b) (i) Explain Buffing and Polishing. (4)

(ii) Describe the Indian standard marketing system for grinding wheels. (12)

15. (a) (i) Describe the numerical control elements present in a NC system. (8)

(ii) Describe the actuation system employed in CNC machine tools. (8)

Or

(b) Explain the following :

(i) Canned cycles (4)

(ii) Preparatory functions (4)

(iii) Motion commands in Computer Aided Part Programming. (8)

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