13/12/18 AN

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

Question Paper Code : 20808

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Fourth/Sixth Semester

Mechanical Engineering

ME 6402 — MANUFACTURING TECHNOLOGY — II

(Common to : Mechanical Engineering (Sandwich)/Industrial Engineering and Management/Industrial Engineering/Mechanical and Automation Engineering)

(Regulations 2013)

(Also Common to : PTME 6402 – Manufacturing Technology – II for B.E. (Part-Time) – Third Semester – Mechanical Engineering – (Regulations – 2014))

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Tool wear.
2. Deduce the factors that contribute to poor surface finish in cutting process.
3. State the advantages of automats over conventional lathes.
4. Write down any four operations performed on a center lathe.
5. What is broaching operation?
6. How do you classify milling cutters?
7. Mention the factors involved in the selection of a grinding wheel.
8. Name any four abrasives used in manufacture of grinding wheels.
9. Compare NC with CNC in machining process.
10. What is micromachining?

PART B — (5 × 13 = 65 marks)

11. (a) Detail the nomenclature of single point cutting tool with illustrative sketches.

Or

(b) (i) Classify the types of chip formation and elaborate its types. (8)

(ii) Write short notes on the following :

(1) Rake angles (3)

(2) Cutting fluids. (2)

12. (a) (i) Detail the procedure for thread cutting operation. (10)

(ii) How special attachments help in improving the productivity? (3)

Or

(b) Discuss about the construction and working principle of Single spindle automatic screw type machine with illustrative sketch.

13. (a) (i) Classify the different types of milling cutter and outline each with illustrative sketch. (9)

(ii) Explain following milling operations :

(1) Form milling (2)

(2) Gang milling. (2)

Or

(b) (i) Summarize the different operations performed using driller and shaper machine. (8)

(ii) Enlist the assumptions made in gear cutting process. Also detail the impact on manufacturing of such assumptions made. (5)

14. (a) Discuss in detail any two types of surface grinding process with neat sketches.

Or

(b) Classify the types of broaching machine and spell in detail about each process.

15. (a) Describe in brief the basic components of a tape operated NC machine tool.

Or

(b) Narrate the design considerations of CNC machines.

PART C — (1 × 15 = 15 marks)

16. (a) (i) Spell in detail the procedure for taper turning process of cylindrical rod. (12)

(ii) State the general applications of Abrasive Jet Grinding process. (3)

Or

(b) (i) Compare the gear hobbing process over any other (One) type of gear generation processes. (10)

(ii) State the effect of surface grinding on deciding the surface roughness of a component. (5)

———————