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

Question Paper Code : 91839

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Fourth/Sixth Semester

Mechanical Engineering

ME 6402 – MANUFACTURING TECHNOLOGY – II

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

(Regulations 2013)

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

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A **(10×2=20 Marks)**

1. What are the functions of a machine tool in machining ?
2. Define machinability.
3. Give the use of face plate in the lathe.
4. List the characteristic features of semi automatic lathes.
5. What are the work holding devices used in a shaper ?
6. How does the helix angle formed in the drilling tool ?
7. Give the applications of grinding.
8. Name the various materials of broach.
9. What are the two major types of NC systems ?
10. Give the functions of the two codes : G20 and G94.

PART – B (5×13=65 Marks)

11. a) i) Discuss the mechanism of chip formation in machining the brittle materials. (8)

ii) Compare the orthogonal and oblique metal cutting. (5)

(OR)

b) i) Discuss the characteristics and applications of any four cutting tool materials. (8)

ii) During turning a metallic rod at a given condition, the tool life was found to increase from 25 min to 50 min. When cutting speed was reduced from 100 m/min to 80 m/min. How much will be the life of that tool if machined at 90 m/min ? (5)

12. a) Describe the various machining operations carried out in the centre lathe with the help of neat sketches. (13)

(OR)

b) Describe the construction and working principle of Swiss type automatic screw lathe with the help of neat sketches. (13)

13. a) Assess the Crank and slotted link quick return mechanism in the shaper. (13)

(OR)

b) Briefly describe the following gear manufacturing methods :

i) Gear hobbing. (7)

ii) Gear milling. (6)

14. a) Write short notes on the following :

i) Any three Artificial abrasives. (6)

ii) Internal cylindrical grinding machine. (7)

(OR)

b) i) Sketch and explain the configuration of broaching tool. (7)

ii) Draw and explain the working principle of Horizontal continuous broaching machine. (6)

15. a) i) Write the CNC program for the figure shown in Fig. Q. 15 (a) (i) Mention the assumptions made. **(9)**

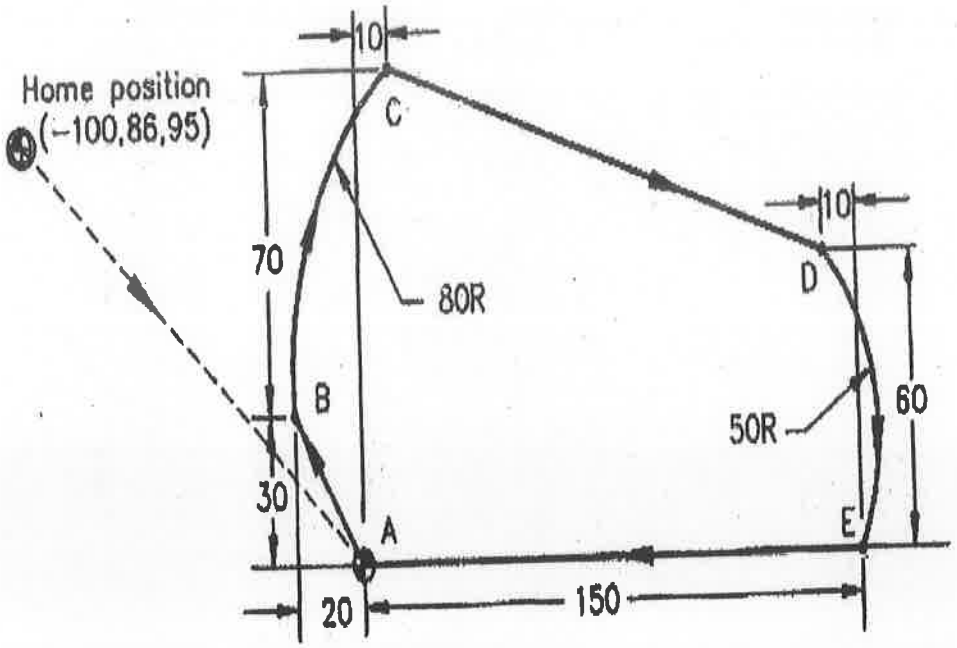

Fig. Q. 15 (a) (i)

ii) Differentiate between absolute and incremental programming in the CNC. **(4)**

(OR)

b) i) Discuss the salient features of CNC machining centre. **(9)**

ii) Compare between the DNC machine and CNC machine. **(4)**

PART – C **(1×15=15 Marks)**

16. a) Analyse the various types of special attachments in lathe with the diagrammatic sketches. **(15)**

(OR)

b) Evaluate the marking system of conventional and super abrasive grinding wheel with the examples. **(15)**