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B.E (Full Time) End Semester DEGREE EXAMINATION, NOV / DEC 2011

Fourth Semester

Mechanical Engineering

ME 283 – MANUFACTURING TECHNOLOGY

(Regulation 2004)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. List any four properties of carbide cutting tool.
2. What are the functions of cutting fluid in metal cutting process?
3. How the multi spindle automatic lathes are classified?
4. Determine the angle at which compound rest will be switched taper on the lathe.
OD = 60 mm ID = 20 mm L = 80 mm.
5. What are the different methods of gear finishing process?
6. What are the main operation performed on a planner?
7. What is the push type broaching operation?
8. List any four application of lapping operation.
9. Write the "M" codes for the tool change and coolant on soft operations.
10. List the any two important features of CNC control systems.

Part – B (5 x 16 = 80 marks)

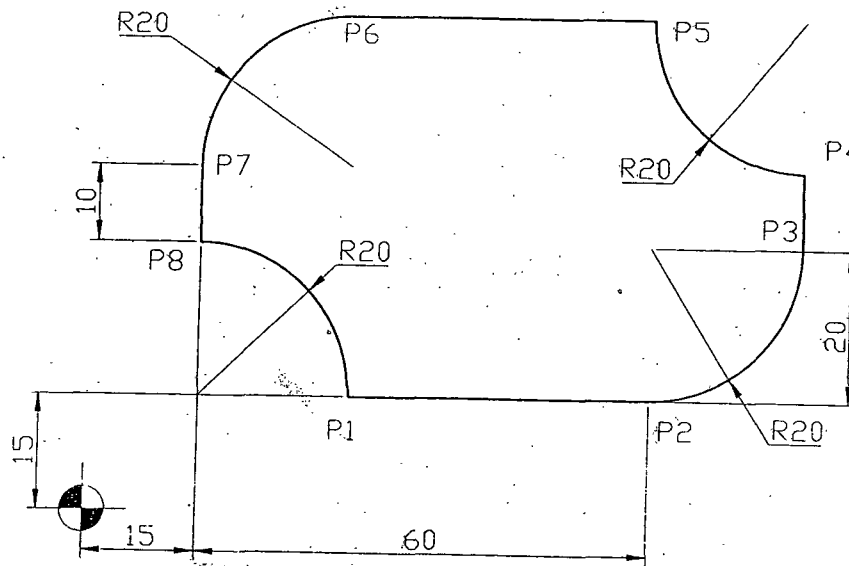
11. a) i) Explain the salient features of automatic screw machines. (8)
ii) Explain the following operations performed on lathe with the neat sketches. (8)
i) Boring ii) Knurling iii) Grooving.
 12. a) i) With the aid of neat sketches, explain the mechanics of chip formation. (8)
ii) What are the types of chips are formed in metal cutting process. Discuss the reasons. (8)
- OR**
- b) i) With the help of Merchant's Force Circle. Explain the various forces in orthogonal cutting. (16)
13. a) Explain the principle of operation of gear hobber with neat sketches. List the advantages, limitations and applications. (16)
- OR**
- b) i) Distinguish between upmilling and down milling operation. (6)
ii) Write a short notes on the following milling cutter (10)
i) T – Slot milling cutter ii) Fly cutter iii) Angle miller cutter.

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14. a) i) With the aid of suitable example, explain the standard marking system for grinding wheel. (12)
- ii) What is centreless grinding operation? (4)

OR

- b) i) Write a short notes on
i) Honing ii) Buffing iii) Lapping.
15. a) i) Briefly describe the various elements in CNC machining centre. (8)
- ii) Write a CNC part program for fig. A . Assume suitable spindle speed and feed. (8)



OR

- b) i) What is computer assisted part programming? Explain in detail. (8)
- ii) Discuss the various statements in APT programming. Explain with suitable example. (8)