

B.E/B.Tech DEGREE EXAMINATIONS, APRIL/MAY2014

Manufacturing Engineering(R-2008)

Third Semester

MF9201 MANUFACTURING PROCESSES-I

Time:3 Hours

Max.:100 Marks

Answer ALL Questions

PART -A(10x2=20 Marks)

- 1 What are the conditions that would allow a continuous chip to be formed in metal cutting?
- 2 How do you define tool life?
- 3 How is thread chased in a lathe?
- 4 What is the need for clapper box in a mechanical shaper?
- 5 What is the marking system followed in case of grinding wheel?
- 6 List out any four types of bonds used in making of grinding wheel.
- 7 What is the difference between cutting and forming of gears with respect to the principle?
- 8 Why gear finishing is required?
- 9 List two most commonly used types of single spindle automatics.
- 10 Make a note on transfer mechanism.

PART -B(5 x 16=80 Marks)

- 11 i) Derive an expression for shear angle in orthogonal cutting in terms of rake angle and chip thickness ratio. (8)
- ii) What are the various forms of wear found in cutting tools? Show with a neat sketch. (8)
- 12 a.i) Describe the methods of generating long and short taper in centre lathe. (8)
- ii) Describe the methods of holding the work pieces in shapers. (8)

Or

- b.i) Describe the setup that one can use for milling cams in a milling machine. (8)
- ii) Show with neat sketches constructional features of a hand reamer and label its important features. (8)

- 13 a.i) Describe the dressing and balancing requirements in grinding. (8)
ii) Briefly describe creep feed grinding (8)

Or

- b.i) With suitable sketch describe in detail various arrangements of centreless grinding (8)
ii) Write short note on the following 1)Lapping 2)Structure of a grinding wheel. (8)

- 14 a.i) Explain the principle of gear shaping. (8)
ii) Discuss various gear finishing operations. (8)

Or

- b.i) Enumerate Gleason method of bevel gear generation. (8)
ii) Explain the principle of gear hobbing. (8)

- 15 a.i) Give the sketch illustrating the principle of operation of a automatic cut off machine (8)

- ii) Write about the following tests for slide ways: (8)

1) Strightness 2) Flatness

Or

- b.i) Describe with a neat sketch the operation swiss type (sliding head type)automatic lathe (8)

- ii) What are the materials used for the manufacture of support structure in machine tool? Give their applications and advantages. (8)
