

Code: R7310304

R7

B.Tech III Year I Semester (R07) Supplementary Examinations, May 2013

MACHINE TOOLS

(Mechanical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Differentiate between positive and negative rake angles.
(b) How is the nose radius of a cutting tool selected?
- 2 What type of work holding devices are generally used in a lathe? Give the typical applications, comparative accuracies, and disadvantages.
- 3 (a) What are the applications of shaping machines in a typical machine shop?
(b) Describe the operation of the quick return motion in a mechanical shaper.
- 4 What are the different types of drills used? Explain the function of each of the type of drill.
- 5 (a) A 100 mm diameter milling cutter, having 10 teeth, cuts at 21.14 m/min. The depth of cut is 4 mm and table feed is 140 mm/min. Determine the percentage reduction in sliding between the cutter edges and the material cut, which results from a change from up-cut to down-cut milling.
(b) Describe the functions of knee, column and saddle in a milling machine
- 6 (a) What are the differences between coated and bonded abrasives in grinding?
(b) Explain why there are so many different types and sizes of grinding wheels.
- 7 Explain the principle of operation of lapping, honing and broaching with neat sketches.
- 8 What is the six-point location principle? Explain it with the help of suitable sketches.
