

End Semester Examinations - 2015-16 Even Semester - May 2016

15ME3007 Advanced Tool Design

Set A

Time : 3 hrs
Total Marks: 100

1. a) With neat sketch explain the design procedure for a single point lathe tool. (15)
b) Determine the horse power required and the thrust developed when drilling cast iron with a 20 mm standard drill at a feed of 0.3 mm/rev and a speed of 500 rpm. (5)

OR
2. Discuss the various elements to be considered while selecting milling cutter for a particular application.
3. a) Define Gauges? What are the advantages and disadvantages of fixed – limit gauges compared to indication gauges. (5)
b) What are the factors affect the selection of material for gauges? Discuss about the various material used for making gauges. (15)

OR
4. What are the essential requirements for a clamping device? Explain the different types of clamps with neat sketches.
5. a) Describe the construction of milling fixture and also explain the method of locating milling fixture with respect to cutter location. (15)
b) Distinguish between a compound die and a combination die. (5)

OR
6. a) Explain the procedure for designing a blanking tool taking an example. (12)
b) Find the total pressure, dimensions of tools to produce a washer 4 cm outside diameter with 2 cm diameter hole from a material of 4 mm thick, having shear strength of 360 N/mm². (8)
7. Explain detail the design principles while designing a die for drawing operation.

OR
8. Explain in detail about the design principles common to jigs and fixtures.
9. Discuss the design requirements of twist drill used in CNC drilling machine with neat sketches.

Wishing you All the Best