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B.E (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV/DEC 2012

MECHANICAL ENGINEERING BRANCH

FOURTH SEMESTER

ME 9251 – Manufacturing Technology -II

(Common to Industrial Engineering Branch)

(REGULATIONS 2008)

Time: 3 Hrs

Max Marks: 100

Answer ALL Questions

Part – A

(10 x 2 = 20 Marks)

1. How are orthogonal cutting differ principally with oblique cutting?
2. State any two unusual properties of carbide as cutting tool material.
3. In what way machining with milling differ from turning?
4. What is the rotational speed of the lathe spindle while turning a steel rod of 50mm diameter at cutting speed of 22 m/min.?
5. Why lathe spindle is made hollow?
6. List any four attachments used in horizontal milling machine.
7. Distinguish between straddle milling and form milling.
8. List any four advantages of hydraulic shaper.
9. What is unique about broaching as compared with other machining process?
10. What is CNC turning lathe?

Part – B

(5 x 16 = 80 Marks)

11. a) i). Explain the important requirements of cutting tool materials. (6)
ii). Turning experiments were conducted for orthogonal cutting using a turning tool of 10° rake angle. The following observations are made:
Chip thickness ratio = 0.3
Horizontal component of cutting force = 1260N
Vertical component of cutting force = 1650N
(1) Determine shear force and coefficient of friction (5)
(2) Sketch the forces on Merchant circle diagram (5)
12. a) i). Sketch turning tool and explain the importance of various tool angles. (6)
ii). Describe with a line sketch the constructional features of taper turning attachment. (10)