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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Second Semester, M.Tech. - Mechanical Engineering (MCIM)

Semester End Examination; May/June - 2018

Newer Machining Techniques

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

- 1 a. Defining hard machining. Explain the technological processes including hard machining. 10
- b. Explain the equipments and tools used in hard machining. 10
- 2 a. Explain the characteristics of hard machining process. 10
- b. Explain the applications of hard machining process. 10

UNIT - II

- 3 a. Explain the principle directions in the reduction of MWF economical, ecological and health impacts. 10
- b. With neat sketch, explain NDM with external aerosol supply. 10
- 4 a. What is the effect of reinforcement particles on surface integrity and chip formation? 10
- b. Explain the relation between shear and friction angles. 10

UNIT - III

- 5 a. With a neat sketch, explain the process in mould manufacture. 10
- b. With a neat sketch, explain the proposed work planning for CAM in five-Axis milling. 10
- 6 a. Explain tool path selection using cutting force prediction in three axis case. 10
- b. Explain i) Three axis mould ii) Five axis mould. 10

UNIT - IV

- 7 a. With a neat sketch, explain the process of AFM. 10
- b. With a neat sketch, explain the process MFP. 10
- 8 a. With a neat sketch, explain the process of electro discharge grinding. 10
- b. With a neat sketch, explain the process of abrasive electro discharge machining. 10

UNIT - V

- 9 a. Explain the machining effects in micro scale. 10
- b. Explain the theoretical basis of nano machining. 10
- 10 a. Differentiate nano metric and conventional machining. 10
- b. Explain the classification of nano machining. 10

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