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

(An Autonomous Institution affiliated to VTU, Belagavi)

Fifth Semester, B.E. - Industrial and Production Engineering

Semester End Examination; Dec. - 2019

Modern Machining Methods

Time: 3 hrs

Max. Marks: 100

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

UNIT - I

- 1 a. Differentiate between conventional and non-conventional machining processes. Write the classification of non-traditional processes. 10
- b. With a neat sketch, explain the working of WJM. 10
- 2 a. Explain the need for non-traditional processes. 10
- b. With a neat sketch, explain the working of AJM. 10

UNIT - II

- 3 a. With a neat sketch, explain the working principle of USM. 10
- b. Illustrate the process of parameters of USM. 10
- 4 a. Sketch and explain the tool feed mechanism used in USM. 10
- b. Discuss the applications, advantages and limitations of USM. 10

UNIT - III

- 5 a. With a neat sketch, explain the working of laser beam machining. List out the limitations of laser beam machining. 10
- b. Outline the importance of process parameters in PAM. 10
- 6 a. With a neat sketch, explain the working of electron beam machining. Write the applications of electron beam machining. 10
- b. Outline the advantages, limitations and applications of PAM. 10

UNIT - IV

- 7 a. With a neat sketch, explain EDM process. 10
- b. What are the essential requirements of dielectric fluid used in EDM? List its applications. 10
- 8 a. Explain the feed control in EDM and label the advantages and limitations of EDM. 10
- b. Identify and explain the process characteristics of EDM. 10

UNIT - V

- 9 a. List out the applications of chemical machining. Show the steps involved in chemical blanking. 10
- b. What is the electromechanical machining? Explain some practical applications of electrochemical machining. 10
- 10 a. What is chemical machining? Explain the process parameters. 10
- b. Summarize the functions of electrolyte. What are the specific advantages of using chemical machining over electrochemical machining? 10