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

(An Autonomous Institution affiliated to VTU, Belagavi)

Sixth Semester, B.E. - Mechanical Engineering

Semester End Examination; May / June - 2018

**Non Traditional Machining**

Time: 3 hrs

Max. Marks: 100

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

## UNIT - I

- 1 a. Explain the factor to be considered while selecting a non-traditional machining process. 10  
 b. With a neat sketch, explain the working principle of ultrasonic machining process. 10
- 2 a. Explain the need for non-traditional machining process. 10  
 b. Explain the effect of various parameters on rate of metal removal and surface roughness obtainable in ultrasonic machining process. 10

## UNIT - II

- 3 a. With a neat sketch, explain the working principle of abrasive jet machining process. 10  
 b. Explain any one type of spark erosion generators used in Electric Discharge Machining (EDM) process. 10
- 4 a. Discuss the advantages, disadvantages and applications of abrasive jet machining process. 10  
 b. With a neat sketch, explain the mechanism of metal removal in EDM process. 10

## UNIT - III

- 5 a. Discuss the advantages, disadvantages and applications of electrochemical machining process. 10  
 b. Discuss any five factors to be considered in selecting etchants for chemical machining. 10
- 6 a. With a neat sketch, explain the working principle of electrochemical grinding process. 10  
 b. Discuss the advantages, disadvantages and application of chemical machining process. 10

## UNIT - IV

- 7 a. With a neat sketch, explain the working principle of laser beam machining process. 10  
 b. Differentiate conventional and high velocity forming methods. 10
- 8 a. Discuss the advantages and limitations of laser beam machining process. 10  
 b. With a neat sketch, explain the working principle of explosion forming process and state its advantages. 10

## UNIT - V

- 9 a. Explain the parameters that govern the performance of PAM. 10  
 b. With a neat sketch, explain the working principle of Electron Beam Machining process (EBM). 10
- 10 a. With a neat sketch, explain the working principle of Plasma Arc Machining process (PAM). 10  
 b. Explain the factors which affect the performance of EBM. 10