

Code: 13A03807

B.Tech IV Year II Semester (R13) Advanced Supplementary Examinations July 2018

MODERN MANUFACTURING METHODS

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) What are the various types of energy sources used in non-traditional machining techniques?
 - (b) What are key aspects of RPT?
 - (c) What is the effect of abrasive grain size on machining rate in USM?
 - (d) What are the abrasives used in AJM process? List the applications of WJM process.
 - (e) What are the main functions of electrolysis in the ECM?
 - (f) List out the advantages and applications of CM.
 - (g) List the main functions of dielectric fluids used in EDM.
 - (h) Define plasma. What are the gases used in PAM?
 - (i) What is the function of magnetic deflection coil used in EBM process?
 - (j) State the principle of LBM. What are the characteristics of laser used in laser machining?

PART – B
(Answer all five units, 5 X 10 = 50 Marks)**UNIT – I**

- 2 How the unconventional manufacturing processes are classified? Explain the various types energies involved & mechanism of metal removal.

OR

- 3 Discuss the evolution of RP systems indicating the history and their growth rate in the industrial sector.

UNIT – II

- 4 Explain the following in detail: (i) Types of transducers for USM. (ii) Feed mechanisms in USM. (iii) USM typical applications. (iv) Abrasives for USM.

OR

- 5 (a) Describe the principle and equipment for Water Jet Machining.
(b) Explain different applications and process control features of WJM.

UNIT – III

- 6 Explain the working principle of electrochemical discharge grinding and discuss the process capabilities and applications.

OR

- 7 Briefly discuss about electrochemical deburring process parameters of chemical machining process that influence the performance of the machining.

UNIT – IV

- 8 Explain the process of electrical discharge grinding (EDG) and list any two of its advantages, limitations and applications.

OR

- 9 Explain the process of PAM with a neat sketch. With respect to principle, equipment process parameter, advantages, disadvantages and applications.

UNIT – V

- 10 Discuss about the process capabilities of EBM and the process parameters of EBM in improving machining quality.

OR

- 11 Explain the thermal features of laser beam machining. Discuss the performance of various types of lasers.