

Roll No.

Total No. of Questions : 08]

[Total No. of Pages : 02

Paper ID [PE507]

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M.Tech. (Sem. - 2nd)

NON CONVENTIONAL MACHINING PROCESSES (PE - 507)

Time : 03 Hours

Maximum Marks : 100

Instruction to Candidates:

- 1) Attempt any **Five** questions.
- 2) **All** questions carry equal marks.

- Q1)** (a) Explain the working principle of Abrasive Jet Machining process with the help of suitable diagrams.
- (b) Describe in brief the process parameters, tool design and material removal rate analysis of Ultrasonic Machining process.
- Q2)** (a) What are the different functions of electrolyte in ECM? List the common electrolytes used in ECM.
- (b) Explain the principle and scheme of operation of Chemical Process.
- Q3)** Describe the following terms for EDM process:
- (a) Duty factor
 - (b) Ignition delay
 - (c) Wear Ratio
 - (d) Heat affected zone (HAZ)
 - (e) Dielectric strength
- Q4)** Explain the working principle of Laser Beam Machining. Also brief its process parameters.
- Q5)** (a) List the product applications of Electron Beam Machining.
- (b) Why EBM process is performed usually in vacuum chamber? Explain.

- Q6) (a) What is the difference between High Velocity Forming and High Energy rate Forming process?
- (b) Describe the working principle of Electro-hydraulic process along with its advantages, disadvantages and applications?
- Q7) (a) What are the requirements of tool material for EDM? Name the common tool materials.
- (b) Explain the functions of dielectric fluid in EDM. Name the common dielectric fluids used in EDM.
- Q8) Write short note on any two of the following:
- (a) Whirling Jet Machining.
- (b) Maskants and Etchants.
- (c) Servo mechanism in EDM.