Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ME) (2012 Onwards E-II) (Sem.–7,8)

NON-TRADITIONAL MACHINING

Subject Code : DE/PE-2.0

M.Code : 72006

Time : 3 Hrs. Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Answer briefly :

(a) Distinguish between traditional and non-traditional machining processes.

(b) What do you understand by computer integrated manufacturing?

(c) Enumerate the applications of non-traditional machining processes.

(d) Explain the material removal mechanism in water jet machining process.

(e) Enumerate the advantages of chemical machining.

(f) Enumerate the main functions of electrolytes used in ECM process.

(g) Enumerate the process parameters used in USM process.

(h) Enumerate the basic characteristics of electrode materials in EDM process.

(i) Explain the working principle of electron beam machining process.

(j) Enumerate the examples of hybrid machining processes.

SECTION-B

2. How non-traditional machining processes can be classified?

3. Explain the material removal mechanism in EDM process giving a neat sketch. Also explain the process parameters used in EDM process.

4. Describe the working and schematics of electrochemical deburring process with the help of a neat sketch.

5. Explain the construction and working of EDM machines with the help of a neat sketch. Also explain the criteria of selection of electrode material in EDM process.

6. Explain the working and construction of air-plasma machining process giving a neat sketch.

SECTION-C

7. (a) Describe the material removal mechanism of abrasive flow machining process with the help of a neat sketch. Also explain the applications and limitations of AFM machine.

   (b) Explain the steps involved in material removal in chemical machining process. Also explain the tooling for chemical machining.

8. (a) Differentiate between sludging and non-sludging electrolytes used in electro chemical machining process. How flow of electrolyte is maintained in ECM process?

   (b) Explain the working and construction of solid state laser machining process giving a neat sketch.

9. (a) Describe the material removal mechanism of ultrasonic machining process with the help of a neat sketch.

   (b) Explain the construction of electron beam gun and diffusion pump in electron beam machining process giving neat sketches.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.