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

Total No. of Questions : 18

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

NON-TRADITIONAL MACHINING

Subject Code : DE/PE-2.0

M.Code : 72006

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS 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

Answer briefly :

1. Limitations of conventional machining processes.
2. Characteristics of flexible manufacturing system.
3. What is ultrasonic transducer?
4. List the important characteristics of water jet machining.
5. Why EBM process is performed in vacuum chamber? Explain.
6. State the Faraday's first law of electrolysis.
7. For what type of works the Electrochemical grinding is best suited?
8. What is transfer machining?
9. Give the product applications of hot machining.
10. What is the function of servo-mechanism in EDM?

SECTION-B

11. How the non-conventional machining processes can be classified?

12. Elaborate the principle and scheme of operation of a chemical machining process.

13. Explain the working principle of Laser Beam Machining? What are its advantages, disadvantages and applications?

14. Explain the working principle of ultrasonic machining (USM) using necessary sketch. What types of abrasives are used in USM?

15. With the help of neat sketches, differentiate between Electrochemical Grinding and Electrochemical Honing?

SECTION-C

16. Calculate machining rate while machining iron electrochemically using copper electrode and sodium chloride solution (specific resistance = 5 ohm-cm) as electrolyte, power supply voltage = 20 V, current = 5000 amp, tool work gap = 0.5 cm and F = 96,500.

17. Explain, how the metal removal in electric discharge machining (EDM) is achieved? Describe in detail the working of an RC circuit.

18. Write short notes on :

    a) Mechanism of metal removal in Plasma arc machining.

    b) Classification of Hybrid machining processes.

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.