

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ME) (Sem.–6)
NON-TRADITIONAL MACHINING

Subject Code : DE/ME-2.0

M.Code : 71252

Date of Examination : 12-07-22

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) What is the need for Non Traditional Machining Processes?
- b) Enumerate the advantages of conventional machining process over the Non Traditional Machining Processes.
- c) What is computer-integrated manufacturing System?
- d) Explain the functions of intensifier and accumulator used in Water Jet Machining process.
- e) Explain the criteria for selection of media in Abrasive Flow Machining process.
- f) Enumerate the applications of water jet machining process.
- g) What are the gases commonly used in Laser?
- h) Discuss the effect of initial gap between tool and work piece on the process efficiency of electrochemical machining process.
- i) Explain the effect of the method of flushing of dielectric in EDM process.
- j) Explain the working principle of photo-chemical machining process.

SECTION-B

2. Explain the classification of Non-Traditional Machining processes giving a neat sketch.
3. Describe the constructional details and material removal mechanism of ultrasonic machining process with the help of a neat sketch.
4. Explain principle of operation, elements and applications of electrochemical grinding process.
5. Explain the construction and working of water-shielded plasma arc machining process with the help of a neat sketch.
6. Explain the principle, working, applications and limitations of CO₂ Laser Beam Machining process giving a neat sketch.

SECTION-C

7.
 - a) With the help of a neat sketch, explain the elements of Abrasive Flow Machining setup, giving the mechanism of material removal in Abrasive Flow Machining process.
 - b) Explain the elements of chemical machining process and discuss the mechanism of material removal giving a neat sketch.
8. Explain the mechanism of material removal in electro discharge machining process with the help of a neat sketch. Also, explain the process parameters involved in EDM process.
9.
 - a) Discuss the advantages of this hybrid process over the individual processes which have been combined. Give the applications of the hybrid machining processes.
 - b) Explain the construction and working of electron beam gun and diffusion pump used 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.