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

Total No. of Questions : 08

M.Tech (ME) (Sem.–2)

MODERN MANUFACTURING PROCESSES

Subject Code : MTME-203

M.Code : 74979

Date of Examination : 17-12-22

Time : 3 Hrs. **Max. Marks : 100**

INSTRUCTIONS TO CANDIDATES :

1. **Attempt any FIVE questions in all, out of EIGHT questions.**
2. **Each question carries TWENTY marks.**
3. **Assume any missing data suitably.**

1. a) Classify the non-traditional machining processes. Compare the conventional machining processes with non- traditional machining processes.

   b) Explain the mechanism of material removal in Abrasive jet machining process and discuss the elements of AJM setup with the help of a neat sketch.

2. a) Explain the material removal mechanism, working and elements of magnetic abrasive finishing process giving a neat sketch. Also explain the process parameters affecting the material removal rate.

   b) Briefly explain the Shaped tube electrolytic machining (STEM) process with the help of a neat sketch.

3. Describe a model of material removal in Abrasive Water Jet Machining process. Also explain the process parameters involved in AWJM process.

4. a) 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.

   b) Explain the tools and abrasive slurry used in ultrasonic machining process.

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

   b) Describe the working, schematics and process parameters of electro chemical deburring (ECDe) process with the help of a neat sketch.

6. a) Explain the steps involved in powder metallurgy process giving a neat flow chart of activities involve therein.

   b) Describe the methods of producing powder for powder metallurgy process giving neat sketches.

7. a) Describe the working and schematics of 3D printing process with the help of a neat sketch.

   b) Explain the material removal mechanism and working of chemical vapor deposition process giving a neat sketch.

8. **Explain any two of the following process giving neat sketches :**

   a) Thermal metal spraying

   b) Plasma arc machining

   c) Solid state laser machining process.

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.