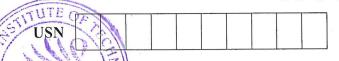
Max. Marks: 80



Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020 **Non Traditional Machining** Anguerine 3 hrs.

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- Explain non-traditional machining, by defining it and discuss about the need of 1 (08 Marks) non-traditional machining in detail.
 - Discuss the comparison between traditional and non-traditional machining in detail. Classify (08 Marks) the general NTM processes in detail.

- Analyze the classification of non-traditional machining based on nature of energy employed 2 (10 Marks) in machining.
 - Explain the specific advantages, limitations and applications of non-traditional machining. (06 Marks)

Module-2

- Explain construction and working process of USM (Ultrasonic Machining) in detail by drawing a neat figure. Discuss the effect of amplitude and frequency and grain diameter. (10 Marks)
 - Describe application and limitations of USM.

(06 Marks)

- Explain AJM (Abrasive Jet Machining) by drawing a neat schematic diagram. Describe "SOD" (Stand-Off Distance) and MRR (Material Removal Rate). (08 Marks)
 - b. Discuss WJM (Water Jet Machining) process in detail by drawing a neat schematic diagram. (08 Marks) Describe Application, Advantages and Limitations.

Module-3

- Explain in detail for the ECM (Electro Chemical Machining). The element of ECM 5 processes D.C. power and control system by drawing the adequate figures. (08 Marks)
 - b. Describe the chemistry of the ECM process and MRR by drawing a neat figure. (08 Marks)

Discuss in CHM (Chemical Machining) the RESISTS (MASKANTS), Chemical Balance. 6 (08 Marks)

Discuss about the Etchants, Applications and Advantages of CHM.

(08 Marks)

Module-4

- Explain EDM (Electrical Discharge Machining) principle, by drawing a neat figure and 7 discuss in detail about DIELECTRIC FLUID.
 - Discuss in detail about Pressure Flushing in EDM. Describe the Applications and (08 Marks) Advantages of EDM. Explain Travelling Wire EDM.

OR

- 8 a. Explain PAM (Plasma ARC Machining) in detail by drawing neat sketch. (08 Marks)
 - b. Discuss the safety precautions, application, advantages and limitations of PAM. (08 Marks)

Module-5

- 9 a. Explain in LBM (Laser Beam Machining) the Ruby Laser by drawing energy level diagram.
 (08 Marks)
 - b. Explain types of laser and discuss in detail the laser beam cutting with gas by drawing a neat figure. List out the advantages and applications. (08 Marks)

OR

10 a. Discuss the principle of EBM (Electron Beam Machining) by drawing a neat figure.

(08 Marks)

b. Draw a graph of MRR (Material Removal Rate) by assuming 15% efficiency and explain advantages and limitations of EBM. (08 Marks)

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