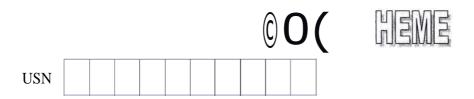


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Fifth Semester B.E. Degree Examination, Dec.2 Man.2020 Non Traditional Machining

Time: 3 hrs. Max. Marks: 80

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

Module-1

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

OR

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

 (06 Marks)

Module-2

3 a. 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)

b. Describe application and limitations of USM.

(06 Marks)

OR

- 4 a. 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.

 Describe Application, Advantages and Limitations. (08 Marks)

Module-3

- 5 a. Explain in detail for the ECM (Electro Chemical Machining). The element of ECM 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)

OR

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

(08 Marks)

b. Discuss about the Etchants, Applications and Advantages of CHM.

(08 Marks)

Module-4

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



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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 explaih..., advantages and limitations of EBM.

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(08 Marks)

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