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Fifth Semester B.F. Degree Examination, Dec.2:6194an12020

Non Traditional Machining

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Define Non-Traditional Machining. What are the need for N.T.M process. Explain briefly. (06 Marks)
- b. What are the comparison between conventional and non-conventional machining. (06 Marks)
- c. What are the various aspects to be considered before selecting a N.T.M process? Discuss briefly. (08 Marks)

OR

- 2 a. Give classification of N.T.M process. (06 Marks)
- b. What are the specific advantages, limitations and applications of non-traditional machining processes? (10 Marks)
- c. Enumerate the physical parameters of the Non-traditional machining process. (04 Marks)

Module-2

- 3 a. With the help of neat sketch, explain working principle of ultrasonic machining process. (10 Marks)
- b. Explain with neat diagrams, process parameters in USM. (06 Marks)
- c. What are the process characteristics of USM? Explain briefly. (04 Marks)

OR

- 4 a. Explain with neat sketch, working principle of Abrasive Jet machining and also give advantages and applications of A.J.M process. (10 Marks)
- b. With the help of neat sketch, explain water jet machining process and also give advantages and disadvantages of W.J.M. (10 Marks)

Module-3

- 5 a. With a neat sketch, explain the working principle of ECM process. (10 Marks)
- b. Explain with a neat sketch, Electro Chemical Grinding (ECG). (06 Marks)
- c. What are the process parameters of ECM? Explain briefly. (04 Marks)

OR

- 6 a. Explain the following in Chemical Machining Process : (06 Marks)
 - i) Maskants
 - ii) Etchants.
- b. Sketch and explain Electro Chemical Honing (ECH). (06 Marks)
- c. Explain with neat sketches of chemical blanking and Chemical Milling process. (08 Marks)

Module-4

- 7 a. With the help of a neat diagram, working principle of Electrical Discharge Machining process. (08 Marks)
- b. Explain with neat sketch, the travelling wire EDM process. (06 Marks)
- c. Mention various dielectric Flow pattern of EDM process. Explain any two with sketches. (06 Marks)

17ME5.**OR**

- 8 a. Explain with neat diagram, construction and working principle of Plasma Arc Machining (PAM). (10 Marks)
b. What are the process parameters of PAM? Explain briefly. (05 Marks)
c. What are the safety precautions in PAM? Explain. (05 Marks)

Module 5

- 9 a. Explain with neat sketch, working principle of Laser Beam Machining process (LBM). (08 Marks)
b. What are the advantages, limitations and applications of LBM? (06 Marks)
c. What are the process parameters and characteristics of LBM? (06 Marks)

OR

- 10 a. Explain with the help of a neat diagram, Operation Principle of Electron Beam Machining (EBM). (10 Marks)
b. What are the advantages, limitations and applications of EBM process? (06 Marks)
c. Explain need for EBM and mechanism of metal removal of EBM process. (04 Marks)

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