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Sixth Semester B.E. Degree Examination, June/July 2016

Non-Traditional Machining

Max. Marks: 100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. How modern machining processes are classified? (06 Marks)
- b. What is the difference between conventional and non conventional machining processes. (05 Marks)
- c. What are the essential physical process parameters for an efficient use of modern machining process? (05 Marks)
- d. Why NTM processes are selected for manufacturing? (04 Marks)
- 2 a. Explain with neat diagram construction and working of USM processes. (10 Marks)
- b. Explain the following parameters with respect to USM:
 - i) Effect of amplitude and frequency of vibration.
 - ii) Effect of grain diameter.
 - iii) Effect of applied static load.
 - iv) Effect of slurry. (10 Marks)
- 3 a. Draw schematic diagram of Abrasive Jet Machining (AJM). Explain its construction and working. (06 Marks)
- b. List and explain the variables used in AJM. (12 Marks)
- c. List the application of water Jet machining. (02 Marks)
- 4 a. Draw schematic sketch of electro chemical machining and explain briefly the elements of ECM process. (10 Marks)
- b. Explain with neat schematic diagram of electro chemical grinding and their advantages and application. (10 Marks)

PART – B

- 5 a. What are the factors on which the selection of a resist for all in chemical machining depend? (03 Marks)
- b. Explain the elements of process (i) Maskants or resist (ii) etchants in CHM. (08 Marks)
- c. Explain with sketch progressive stages of metal removal in chemical blanking. (06 Marks)
- d. List the applications of chemical machining. (03 Marks)
- 6 a. Draw neat diagram of EDM (Electrical Discharge Machining). Explain its construction and working. (10 Marks)
- b. Explain briefly EDM process characteristics. (10 Marks)
- 7 a. Explain the construction and working principle of Plasma Arc Machining (PAM) with neat sketch. (08 Marks)
- b. List the general guideline for designing the torch. (06 Marks)
- c. What are the application of PAM and also mention advantages and limitations? (06 Marks)
- 8 a. With neat sketch, explain working principle of Electron Beam Machining (EBM). (08 Marks)
- b. Draw neat sketch of a typical set up for Laser Beam Machining (LBM) and explain briefly. (08 Marks)
- c. What are the advantages and limitations of LBM? (04 Marks)

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