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B.E / B.Tech (Full Time) End Semester DEGREE EXAMINATION, APRIL / MAY 2012

Fifth Semester

55

Mechanical Engineering

ME 9304 – MODERN MACHINING PROCESSES

(Regulation 2008)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. List the modern machining processes which uses Thermal Energy.
2. Why most of the tool and die manufacture use EDM?
3. What are the common abrasive particle used in AJM process?
4. List the practical application of WJM process.
5. Why commonly copper as used electrode in EDM process?
6. What are the factors affecting MRR in EDM process?
7. What are the common maskant materials used for machining aluminium in chemical machining ?
8. What is the purpose of electrolyte in ECM process?
9. State the limitation of LBM.
10. What is plasma?

Part – B (5 x 16 = 80 marks)

11. a) i) Discuss the anode and cathode reactions in ECM process (assume electrolyte solution is NaCl) (10)
ii) What is principle of electro chemical honing? List the partial applications. (6)
12. a) i) State the needs of modern machining processes for industries. (8)
ii) Discuss the advantages and limitations of modern machining process. (8)

OR

- b) How do you classify the modern machining process based on
 - a) Transfer media
 - b) Energy
 - c) Physical parameters.
13. a) With the help of simple sketch, Explain the arrangement of AJM process. List the advantages, limitations and applications. (16)

OR

- b) Compare the magnetostriction and piezo-electric transducer in USM process. Based arrangement, working principle, advantages and limitations. (16)

14. a) What are the most commonly used spark generating circuits are used in EDM? (16)
Explain any two. List the advantages and draw backs.

OR

- b) i) With the aid of simple sketch, explain the wire feed system in Wire-EDM process. (8)
ii) Explain the principle of material removal in EDM process. (8)
15. a) i) Discuss the thermal features of LBM. (8)
ii) Explain the working principle of Iron Beam process. (8)

OR

- b) Explain the process of EBM. With neat sketch. List the advantages, limitations and applications over PAM process. (16)