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

Eighth Semester

Mechanical Engineering

31

ME 481 – NEWER MACHINING PROCESSES

(Regulation 2004)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. What are the limitation of Newer Machining Process?
2. What is the principle of ultrasonic machining process?
3. What is the purpose of horn in ultrasonic machining process?
4. List the practical applications of water jet machining process.
5. What are the common di-electric fluids used in EDM process?
6. What is the functions of co-axial flushing in wire –EDM process?
7. List the electrolyte used for machining steel and aluminum.
8. What are the advantages of suction flow method in ECM process?
9. Write any two thermal features of LBM process.
10. What is purpose of deflection coil in EBM process?

Part – B (5 x 16 = 80 marks)

11. a) i) How the metal is removed in Wire-Cut EDM process? Explain with simple sketch. (8)
- ii) Discuss the characteristics of spark eroded surface in EDM process. (8)
12. a) i) Justify the need of newer machining process in Today's industries. (8)
- ii) Write the practical application of AJM process. (4)
- iii) Why Boran Carbide is commonly used on abrasive in USM process. (4)

OR

- b) i) Distinguish between conventional and Newer machining process. (8)
- ii) Explain the tool feed mechanism in USM process. (8)

13. a) i) Discuss the following process parameters in USM process. (8)
- i) MRR Vs frequency
 - ii) MRR Vs organize

- ii) Discuss the characteristics of WJM process. (8)

OR

- b) i) With the aid of simple sketch, explain the construction, working principle of WJM process. (12)

- ii) List the common gases used in AJM process. (4)

14. a) i) With the aid of simple sketches, explain the anode and cathode reactions in ECM. (8)

- ii) Explain the various steps in Chemical pricing process. (8)

OR

- b) Explain the working principle of electro chemical grinding process. List the advantages, limitations and applications. (16)

15. a) Distinguish between EBM process and LBM process based construction, working principle and applications. (16)

OR

- b) What are the types of torches used in PAM? Explain the construction and working principle of PAM also list the advantages, limitation and applications.