Roll No. | | | | | | | | | | |

B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2014

MECHANICAL ENGINEERING

V Semester

ME481 Newer Machining Processes/
ME9304 Modern Machining Processes

(Regulations 2004/2008)

Time : 3 Hours Answer ALL Questions Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. What are the transfer media used in AJM, WJM, USM and EDM?
2. List any four advantages of modern machining processes.
3. What is the purpose of concentrator in USM process?
4. What is the effect of abrasive grain size on machining rate in AJM process?
5. What is the co-axial flushing system in wire EDM process?
6. Name the common dielectric fluids used in EDM process.
7. What is the fundamental principle of chemical machining process?
8. List the applications of ECG process?
9. What are the guns or gun mixture used for machining of aluminium, magnesium and cast iron?
10. What is meant by transferred arc type plasma?

Part – B (5 x 16 = 80 marks)

11. i) Compare the EBM and PAM process. Based on principle, construction and working. (10)
    ii) What is meant by dual flow plasma in PAM process? List the advantages. (6)

12. a) Discuss the characteristics features of modern machining processes that distinguish them from conventional machining process. (16)

    (OR)

    b) How the modern machining process classified based on physical parameters, process capability and economics. (16)

13. a) i) What are the basic requirements of tool feed mechanism in USM process? (4)
    ii) With aid of simple sketches explain the graving feed and spring loaded type tool feed mechanism. (12)

    (OR)

    b) i) How the following process parameters affect the MRR in AJM process.
    (i) Mass flow rate (ii) velocity of abrasive particles
    (iii) Gas pressure (iv) stand-off distance (12)

ii) List the practical applications of WJM process. (4)

14. a) i) Explain the working principle of EDM. (8)

ii) Distinguish between suction flushing and pressure flushing in EDM process (8)

(OR)

b) i) How the following process parameters affect the machining rate in EDM process?

(i) capacitance (ii) pulse energy

(iii) spark gap (iv) current density (12)

ii) List the practical applications of wire EDM process. (4)

15. a) i) With aid of simple flow chart explain the chemical milling process. (10)

ii) How the side wall taper formation is avoided in ECM process? (6)

(OR)

b) Write a short notes on

(i) Electro chemical deburring

(ii) Electro chemical honing

(iii) Electro chemical turning (16)