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B.E. / B.TECH. DEGREE EXAMINATIONS, DEC 2019

Sixth Semester

ME16004 – UNCONVENTIONAL MACHINING PROCESSES*(Mechanical Engineering)***(Regulation 2016)****Time: Three Hours****Maximum : 100 Marks**Answer **ALL** questions**PART A - (10 X 2 = 20 Marks)**

	CO	RBT
1. What are the advantages of unconventional Machining processes?	1	R
2. List the unconventional Machining processes based on thermal energy.	1	U
3. Mention the applications of Water Jet Machining.	2	U
4. List the types of transducers used in Ultrasonic machining.	2	U
5. What is the function of servo mechanism in EDM process?	3	U
6. Define the term 'Tool wear ratio' with reference to EDM Process.	3	U
7. What are the functions of electrolyte in ECM?	3	R
8. State the Limitations of Chemical machining.	3	U
9. Why vacuum is needed in Electron Beam Machining (EBM) processes?	4	U
10. What is the principle of Plasma Arc Machining process?	5	U

PART B - (5 X16 = 80 Marks)

11. (a) (i) Compare the conventional and unconventional machining process with respect to different aspects. **(8)** **1** **U**
- (ii) Classify Unconventional machining processes based on basic of type of energy required to Shape the materials. **(8)** **1** **U**

(OR)

- (b) Explain the need for the development of Unconventional Machining Process with any three examples of your own interest. **(16)** **1** **U**

12. (a) Describe the process of Abrasive Jet machining with a simple sketch and discuss about significant process parameters that influencing the machining conditions. **(16) 2 AP**

(OR)

- (b) With a neat schematic illustration, explain the process of Ultrasonic Machining. Mention the advantages, disadvantages and applications of this process. **(16) 2 AP**

13. (a) Explain the process of Electric Discharge Machining with a neat sketch. Also state the various Methods of Dielectric flushing used in Electric Discharge Machining with schematic Diagrams. **(16) 3 U**

(OR)

- (b) Discuss in detail the process of wire cut EDM with a neat sketch and State the merits and demerits of this process. **(16) 3 U**

14. (a) (i) Explain the process of Electro Chemical Machining with neat a sketch. **(10) 4 U**

- (ii) What are the basic requirements of tool materials in ECM Process? Name any four materials. **(6) 4 U**

(OR)

- (b) (i) Describe the process of Electro Chemical Grinding with a neat sketch. **(8) 4 U**

- (ii) Why maskants are required in Chemical machining process? Explain. **(8) 4 U**

15. (a) With a neat sketch, explain the process of Electron beam machining along with the effect of all the process parameters, advantages, disadvantages and applications. **(16) 5 AP**

(OR)

- (b) Explain the principle, construction and working of LASER beam machining. Also state the specific advantages and applications of the process. **(16) 5 AP**