Reg. No. : | | | | | | | | | | |

Question Paper Code: 49708

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Elective

Mechanical Engineering

14UME908 - UNCONVENTIONAL MACHINING PROCESSES

(Regulation 2014)

Duration: 1.15 hrs Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. Unconventional machining process

   (a) employ a traditional tool for material removal
   (b) do not employ a traditional tool for material removal
   (c) employ a single point cutting tool for machining.
   (d) employ a multipoint cutting tool for machining

2. Match the following non-traditional machining processes with the corresponding material removal mechanisms

Machining process	Mechanism of material removal
P. Chemical machining	1. Erosion
Q. Electro-chemical machining	2. Corrosive reaction
R. Electro-discharge machining	3. Ion displacement
S. Ultrasonic machining	4. Fusion and vaporization

   (a) P-2, Q-3, R-4, S-1 (b) P-2, Q-4, R-3, S-1

   (c) P-3, Q-2, R-4, S-1 (d) P-2, Q-3, R-1, S-4

3 In which unconventional machining process mechanical energy is used as a source

(a) Water jet machining (b) Ultrasonic Machining
(c) Electro chemical machining (d) Electron beam machining

4. In which of the following gases is not used in Abrasive jet machining?

(a) Air (b) Nitrogen (c) Carbon di-oxide (d) Argon

5. Tool material used in EDM process is

(a) Copper (b)Copper – Tungsten (c) Graphite (d) All the above

6. Indicate the voltage range of EDM process

(a) 10-50 V (b) 30-250 V (c) 110-325V (d) 230-415V

7. In which of the following methods, an electrolyte is used

(a) Ultrasonic Machining (b) Electrochemical Machining
(c) Abrasive Jet Machining (d) Laser Beam Machining

8. In which of the following, an electrochemical oxidation on the work surface takes place

(a) Electrochemical grinding (b) Electrical discharge Machining
(c) Electrochemical Machining (d) Ultrasonic Machining

9. Identify which is a solid state laser

(a) Ruby laser
(b) Neodymium doped glass laser
(c) Neodymium doped Yitrum-Aluminium-Garnet laser
(d) None of the above

10. Which of the following is used as gas laser in Laser beam machining?

(i) Helium-neon (ii) Agron (iii) CO_2

(a) i only (b) i & ii (c) ii & iii (d) All the above

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11.		Discuss in detail about 802.11architecture.	(8)
12.		Explain the principle, process parameters of abrasive water jet machining process with necessary sketch and also state its merits.	(8)

13		Explain the principle, process parameters of wire EDM process with necessary sketch and also state its applications.	(8)
14.		Explain the principle, process parameters of ECM process with necessary sketch and also state its applications.	(8)
15.		Explain the principle, process parameters of plasma arc machining process with necessary sketch and also state its applications.	(8)