

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--

Question Paper Code: 59713

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

Elective

Mechanical Engineering

15UME911- UNCONVENTIONAL MACHINING PROCESSES

(Regulation 2015)

Duration: One hour

Maximum: 30Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

- Unconventional machining can also be called as? CO1- R
(a) Contact Machining (b) Non-contact machining
(c) Partial contact machining (d) Half contact machining
- Different classifications of unconventional machining based on sources of energy are CO1- U
(a) Mechanical (b) Thermal
(c) Chemical and electro-chemical (d) All of the above
- Ultrasonic machining process can be used for CO2-R
(a) Conductors (b) Insulators (c) Metals (d) All of the above
- Material removal rate in WJM decreases with CO2-R
(a) Increase in amplitude (b) Decrease in grain size of abrasives
(c) Increase in frequency (d) Increase in amplitude
- Which of the following EDM machine is used for cutting shapes cut out of a flat sheet or plate of metal? CO3- U
(a) Wire EDM (b) Sinker EDM
(c) Wire and Sinker EDM both (d) None of the above
- For maximum power delivery using resistance capacitance relaxation circuit in EDM, discharge voltage should ___ % of the supply voltage? CO3- R
(a) 80 (b) 23 (c) 65 (d) 72

7. Electrode gap in electro chemical machining is generally ranged from CO4- U
 (a) 0.5 mm to 0.9 mm (b) 1.1 mm to 1.2 mm
 (c) 0.1 mm to 0.2 mm (d) 3.1 mm to 4.2 mm
8. Which of the following are the materials used for making maskants? CO4- R
 (a) Synthetic materials (b) Rubber materials
 (c) Polymeric materials (d) All of the above
9. Electron beam machining is carried in? CO5- U
 (a) Inert atmosphere (b) Partially filled chamber
 (c) Vacuum (d) Partially vacuum
10. The metal is removed in Plasma arc machining due to CO5- U
 (a) Erosion (b) Chemical reaction
 (c) Melting of metal (d) Grinding

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Make a comparison between traditional and unconventional machining processes in terms of cost, application, scope, Machining time, advantages and limitations. CO1- U (8)
12. For machining glass material, apply the principles of various unconventional machining processes to identify the suitable nontraditional machining processes and also present the reasons to support your selection. CO2- App (8)
13. Explain any four factors that you carry out the analysis for optimization of MRR in EDM process. CO3- U (8)
14. Discuss the working of ECH and ECG with suitable sketches. CO4- U (8)
15. Differentiate between LBM and EBM based on applications and limitations. CO5- U (8)