

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

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**MMIP-302(C)****M.E./M.Tech., III Semester**

Examination, November 2018

**Advance Production Technology****(Elective - II)****Time : Three Hours****Maximum Marks : 70**

- Note : i) Attempt any five questions.  
ii) All questions carry equal marks.

1. a) How the developments in the area of materials are partly responsible for evolution of modern machining process? 7  
b) Classify modern machining processes on the basis of the type of energy employed. Also state the mechanism of material removal, transfer media and energy sources used. https://www.rgpvonline.com 7
2. a) How does the ultrasonic machining process work? 7  
b) Describe the water jet cutting process. 7
3. a) What is meant by the term over cut in electric discharge machining? 7  
b) Identify two major disadvantages of plasma arc cutting. 7
4. a) What are the three methods of performing the masking step in chemical machining? 7  
b) What is a photo resists in chemical machining? 7

MMIP-302 (C)

PTO

237

6

[2]

5. In a wire EDM operation performed on 7mm thick C 1 using a tungsten wire electrode whose diameter = 0. past experience suggests that the overcut will be 0.0 that the Kerf width will be 0.165mm. Using a discharge 10 amps. What is the allowable feed rate that can be the operation.
6. In an electrochemical machining operation the frontal area of the electrode is  $2.5\text{m}^2$ . The applied current is 15 and the voltage is 12 Volts. The material being pure aluminium, whose specific removal is  $1.26 \times 10^{-4}\text{m}^3/\text{amp-min}$ . If the ECM process is 90% efficient determine the rate of metal.
7. a) Explain the effect of focussing on the performance of LBM.  
b) Explain the production of laser beam and write the principle of LBM.
8. a) Discuss the effect of amplitude of vibration, frequency of vibration, grain size and % of abrasive concentration on MRR in USM.  
b) Explain the functions of a horn in USM.

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2

MMIP-302 (C)

238