

Unit 12 - Week 10 - Electro-discharge Machining Process

Course outline

How does an NPTEL online course work?

Week 0

Week 1 - Basics of Manufacturing Processes

Week 2 - Introduction to casting process

Week 3 - Gating Systems and Rate of solidification

Week 4 - Estimation of solidification time with different conditions and Riser design

Week 5 - Machining Processes

Week 6 - Cutting tool life estimation

Week 7 - Introduction to Micro-Systems Fabrication Technology

Week 8 - Abrasive water jet machining and Ultrasonic Machining

Week 9 - Introduction to Electrochemical Machining

Week 10 - Electro-discharge Machining Process

Design for Electrolyte flow in ECM

Introduction of Electro-chemical Drilling Process

Introduction to Finishing Process

Electric Discharge Machining Process Part-I

Electric Discharge Machining Process Part-II

Effect of various process parameters on EDM process

Analysis of RC circuit for EDM

Electro discharge machining system

Quiz : Assignment 10

Assignment 10 solution

Manufacturing Process Technology I and II: Feedback For Week 10

Week 11 - Laser Beam and Electron Beam Machining Processes

Week 12 - Metal Forming Processes

Text Transcripts

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Assignment 10

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-04-08, 23:59 IST.

Assignment 10

1) What is the most preliminary condition for selecting workpiece in ECM? 1 point

- Workpiece must be brittle.
- Workpiece must be conductive.
- Workpiece surface must have mirror finish.
- Workpiece must be rectangular in shape.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Workpiece must be conductive.

2) Which of the following is the most appropriate reason for designing for electrolyte flow? 1 point

- To carry away heat.
- To carry away machining products.
- To have machining at required feed rate.
- All of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of the above.

3) Which of the following is the primary function of electrolyte in ECM? 1 point

- Completing the electrical circuit.
- Sustaining the required electrochemical reactions.
- Carrying away the generated heat/waste product.
- All of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
All of the above.

4) Electrochemical drilling observes: 1 point

- Increase in hydraulic forces.
- Decrease in hydrolic forces.
- No effect related to hydraulic forces.
- None of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
Increase in hydraulic forces.

5) What is the percentage of material removed in electrochemical grinding by mechanical abrasive action and electrochemical dissolution respectively? 1 point

- 50% and 50%
- 30% and 70%
- 10% and 90%
- 70% and 30%

No, the answer is incorrect.
Score: 0

Accepted Answers:
10% and 90%

6) Life of a ECG grinding wheel is: 1 point

- Half of the conventional grinding wheel.
- 100 times more than conventional grinding wheel.
- Same as that of conventional grinding wheel.
- 10 times more than conventional grinding wheel.

No, the answer is incorrect.
Score: 0

Accepted Answers:
10 times more than conventional grinding wheel.

7) Which of the following material cannot be machined using electronic discharge machine? 1 point

- Iron
- Wood
- Aluminum
- Copper

No, the answer is incorrect.
Score: 0

Accepted Answers:
Wood

8) The most important function of dielectric medium in EDM is: 1 point

- To serve as medium only.
- To decrease the material removal rate.
- To flush away the debris and assist spark.
- None of the above.

No, the answer is incorrect.
Score: 0

Accepted Answers:
To flush away the debris and assist spark.

9) For maximum power delivery using resistance capacitance relaxation circuit in EDM, discharge voltage should be ___ % of the supply voltage? 1 point

- 80
- 72
- 23
- 65

No, the answer is incorrect.
Score: 0

Accepted Answers:
72

10) In electric discharge machining, the pulse cycle time (t_c) can be obtained using the relation: (R and C are resistance and capacitance of the circuit; V_0 is the applied voltage, and V_d is discharge voltage) 1 point

- $t_c = RC \log_e (V_d / (V_0 - V_d))$
- $t_c = RC \log_e (V_0 / (V_0 - V_d))$
- $t_c = RC \log_e ((V_0 - V_d) / V_d)$
- $t_c = RC \log_e ((V_0 - V_d) / V_0)$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $t_c = RC \log_e (V_0 / (V_0 - V_d))$