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Total No. of Questions : 08

M.Tech.(ME) (Sem.-1)

ADVANCE MANUFACTURING PROCESSES

Subject Code : MME-507

Paper ID : [E0421]

Time : 3 Hrs.

Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

- Q1. a. Explain why studying the chip formation is important in understanding machining operation. (10)
b. List and explain the factors that contribute to poor surface finish in machining operation. (10)
- Q2. a. Sketch and illustrate the effect of following parameters on MRR during EDM process :
i) Resistance; ii) Current density
iii) Pulse energy iv) Capacitance. (15)
b. Explain the term 'Recast layer' in context to EDM process. (5)
- Q3. With the help of a neat diagram, explain the working principle and behaviour of various process parameters of Abrasive Flow Machining process. (20)
- Q4. a. Describe the difficulties you might encounter in applying explosion welding in a factory environment in urban area. (10)
b. Explain what is meant by solid state welding. (10)
- Q5. Explain with the help of neat sketch, the working principle of electromagnetic forming process. How this process is different from other mechanical forming processes? Explain. (20)
- Q6. a. Do you think that early formation of dendrites in a mold can impede the free flow of molten metal into the mold? Explain. (10)
b. Explain the significance of tree in the investment casting. (10)
- Q7. Compare the solidification time of two optimum risers of the same volume when one has a cylindrical shape and other is of the form of a rectangular parallelepiped. (20)
- Q8. Write short notes on the following : (10+10)
a. Ultrasonic welding.
b. Super plastic forming.