QP Code: RO20MTECH213 Reg. No | | | | | | | | | | | AR 19

GIET UNIVERSITY, GUNUPUR – 765022

M. Tech (Second Semester Examinations) – October' 2021

MPCMT2020 – ADVANCED MANUFACTURING PROCESSES

(Manufacturing Technology)

Time: 2 hrs Maximum: 50 Marks

(The figures in the right hand margin indicate marks)

PART – A

Q.1. Answer ***ALL*** questions (2 x 10 = 20)

a. Define Lost wax Pattern?

b. What are the different types of defects found in casting process?

c. Differentiate between dielectric in EDM and electrolyte in ECM

d. State the principle on which injection moulding works?

e. What are the advantages of constricting plasma in PAW?

f. What is weld porosity? How is it caused?

g. Why vacuum is important in producing a good quality weld in EBW?

h. Write down the classification of bending operations.

i. What is peen forming?

j. Write any two advantages of hydro mechanical forming

PART – B **(6 x 5 = 30 Marks)**

Answer ***ANY FIVE*** questions Marks

2. Draw a schematic diagram showing the start and end of freezing along the mould well and the centerline of the casting, with time for M – C steel. Define the center – line freezing resistance, freezing rates and casting yield. (6)

3. Explain the working principle of investment casting process with a neat sketch? (6)

4. Calculate the machining rate and the electrode feed rate when iron is electronically machined, using copper electrode and NaCl solution (Specific resistance = 5.0 ohms - cm). The power supply data of the ECM machine used are: Supply voltage 18 V DC; Current 5000 amp; A tool – work gap of 0.5 mm may be assumed. (6)

5. List the various destructive and non-destructive tests of testing welded joints. Explain working of anyone non-destructive testing method (6)

6. Explain the following weld defects and their remedies: (i) Spatter (ii) Incomplete Penetration (iii) Under-cut (6)

7. Explain electro hydraulic forming process with a neat sketch (6)

8. Explain the cutting operation in sheet metal operations with a neat sketch. (6)

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