

[Total No. of Questions - 9] [Total No. of Printed Pages - 3]
(2125)

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B. Tech 4th Semester Examination

Manufacturing Technology-I (OS)

ME-4002

Time : 3 Hours

Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt total five questions. Select one question from each section A, B, C and D. Section E is Compulsory.

SECTION - A

1. (i) Explain the materials generally used for pattern making. (10)
(ii) Describe a procedure to make a green sand mould. (10)
2. Why defects occur during casting and what are factors responsible for these defects? Also explain these defects with neat sketches by indicating their causes and remedies. (20)

SECTION - B

3. (i) What is investment casting? What are the applications of investment casting? Explain.
(ii) What is centrifugal Casting? What are types of centrifugal casting? Name the materials commonly used for making the moulds of centrifugal castings. (10x2=20)
4. (i) What is rolling? Explain how cast structure is converted into a wrought structure by hot rolling.

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- (ii) How can you tell that whether a certain part is forged or cast? Describe features that would you investigate to arrive at conclusion. (10x2=20)

SECTION - C

5. (i) What is welding? How welding Processes are classified? Discuss the principle of electric arc welding.
(ii) Explain the factors involved in selection of electrodes in arc welding. (10x2=20)
6. (i) What determines whether a certain welding process can be used for work pieces in horizontal, vertical or upside-down positions or for all types of positions? Explain giving appropriate examples,
(ii) What is importance of Sheet Metal Working in Industry? Briefly explain the various operations used in sheet metal working. (10x2=20)

SECTION - D

7. (i) What materials can friction stir welded and which cannot? Explain your answer.
(ii) What is resistance welding? What are types of resistance welding? Explain briefly the applications of resistance welding in engineering. (10x2=20)
8. (i) Discuss the working principle and applications of electron beam welding process?
(ii) Explain soldering and brazing process giving suitable examples of these processes used by mechanical engineer. Also explain why soldering is generally applied to thinner components. (10x2=20)

SECTION - E

9. Answer the following questions briefly:

- (i) What do you mean by the term core print?
- (ii) List out the casting defects occurred due to improper ramming.
- (iii) What are the advantages and disadvantages of A.C. and D.C. welding?
- (iv) Differentiate between brazing and braze welding.
- (v) How do compound dies differ from progressive dies?
- (vi) List out some common applications where extrusion is used.
- (vii) What do you mean by spring back in bending operation?
- (viii) What is the difference between stretch forming and bending?
- (ix) Write short note on film blowing.
- (x) What is the reinforced plastic? Give some example.
(2×10=20)