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Total No. of Questions: [11]

Total No. of Printed Pages: [1]

M. Tech ME (Semester – 2nd)
WELDING METALLURGY
Subject Code: MMEE2260
Paper ID: [191013]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It carries 16 marks. It consists of 4 questions of 4 marks each.
2. Section B consist of 4 questions of 8 marks each. The student has to attempt any 3 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(4 marks each)

- Q1. How does recrystallization affect the microstructure of a metal?
- Q2. Explain partially mixable components.
- Q3. Explain spherodising.
- Q4. Explain Multi pass welding.

Section – B

(8 marks each)

- Q5. What is solidification, and how does it affect the micro and macro structure of pure metals?
- Q6. What is the difference between elastic and plastic deformation?
- Q7. What is the structure of welds, and how does it impact their properties?
- Q8. What is hardenability, and how does it relate to the heat treatment of steels?

Section – C

(10 marks each)

- Q9. Explain the Fe-C diagram, and how is it used to predict the properties of steel?
- Q10. What is the thermal field, and how does it impact the welding process?
- Q11. Explain the T-T-T diagram, and how is it used to predict phase transformations in steels?