

**BENGAL ENGINEERING AND SCIENCE UNIVERSITY, SHIBPUR**

**B.E. 7<sup>TH</sup> SEMESTER ( MET ) FINAL EXAMINATIONS, 2011**

**Joining of Materials ( MT - 703 )**

**Full Marks :70**

**Time : 3 hours**

***Answer any FIVE Questions.***

1. State the Factors for Selection of right kind of Electrode for a particular welded joint.  
State the Factors for the Selection of right kind of Shielding Gases in MIG Welding.  
State and explain the Functions of Flux Coating Ingredients. ( 4 + 4 + 6 = 14 )
  2. Explain with diagram the working principle of SAW and discuss its merits, demerits and applications. How Arc Length is maintained constant in automatic / semi-automatic MIG welding sets. ( 8 + 6 = 14 )
  3. Explain the Principle of Operation of PLASMA ARC WELDING and discuss about its Advantages, Disadvantages and Applications. How Key Hole Type of Joint is obtained in PLASMA ARC WELDING? ( 9 + 5 = 14 )
  4. Write notes on the following : ( 4 x 3  $\frac{1}{2}$  = 14 )  
a) Micro Structural Changes in a weldment of plain carbon steel. b) Weld Cracking.  
c) Welding of Al and its Alloys. d) Welding of Cast Iron.
  5. Explain the problems encountered in Under Water Welding. Explain different types of Under Water Welding. What are the characteristics of a good Under Water Welding? ( 4 + 7 + 3 = 14 )
  6. State and explain the possible Defects in a Weldment. State different types of Distortion. Suggest the suitable remedies to prevent Distortion in a Weldment. ( 6 + 3 + 5 = 14 )
  7. Define the term Weldability. Discuss the effect of alloying elements on Weldability. Explain the Weldability of Stainless steels. ( 7 + 7 = 14 )
  8. Explain the Mechanism of Arc Blow. What are the effects of Arc Blow. State the Remedies for Arc Blow. ( 5 + 4 + 5 = 14 )
  9. Explain different types of Metal Transfer during Arc welding. Explain the Forces affecting metal transfer. ( 9 + 5 = 14 )
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