

**B. TECH.****THEORY EXAMINATION (SEM-VIII) 2016-17****ADVANCED WELDING TECHNOLOGY***Time : 3 Hours**Max. Marks : 100**Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.***SECTION – A**

1. **Attempt all parts of the following questions:** **10 x 2 = 20**
- (a) What is deformation resistance welding?
  - (b) Compare vacuum brazing with welding.
  - (c) How radial friction welding is used to join collars to shafts and tubes?
  - (d) What are the advantages of constricting plasma in PAW?
  - (e) What are the effects of gases in welding?
  - (f) What are the main factors affecting the welding design?
  - (g) Define dilution.
  - (h) Name any four weld defects.
  - (i) What are the factors that cause slag inclusion?
  - (j) Give two examples of adhesives and mention its general characteristics

**SECTION – B**

2. **Attempt any five of the following questions:** **5 x 10 = 50**
- (a) What are the different joint designs in adhesive bonding? Explain how a good joint design can be selected?
  - (b) Explain the welding symbol with an example.
  - (c) Explain the process of Needle Arc Micro Plasma Welding.
  - (d) Describe the reasons that fatigue failure generally occur in HAZ of welds instead of through the weld bead itself.
  - (e) Explain how different process parameter influence Laser Beam Welding.
  - (f) With suitable sketch explain the process of TIG welding. What are its disadvantages?
  - (g) What are the different joint designs in adhesive bonding? Explain how a good joint design can be selected?
  - (h) Describe Principle of operation of EBW (Electron beam welding). What are the possible problem or difficulties and how it can be dealt with? Write down the advantage and limitation.

**SECTION – C**

- Attempt any two of the following questions:** **2 x 15 = 30**
- 3 (i) What are the different joint designs in adhesive bonding? Explain how a good joint design can be selected?  
 (ii) Explain how the weld quality of different welded joints can be determined?
- 4 **Explain the following:**
- (i) Dye Penetrant Testing
  - (ii) Inspection of welds.
  - (iii) Discontinuities in welds and their causes.
- 5 (i) Explain With neat labeled sketch the working of Ultra sonic Welding.

- (ii) What are the different methods of diffusion welding? How surface preparations affect the strength of the joint?