

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.

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

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