

**B.Tech. – VIEP – MECHANICAL ENGINEERING
(BTMEVI)**

Term-End Examination

December, 2015

00081

BIMEE-024 : WELDING ENGINEERING

Time : 3 hours

Maximum Marks : 70

*Note : Attempt any **five** questions. All questions carry equal marks. Standard notations and symbols have their usual meaning.*

1. (a) Explain, using a neat diagram the process of submerged arc welding. 7
- (b) Make a comparison between electro-slag and electro-gas welding processes. 7
2. (a) How would you classify solid state welding processes ? Explain any one of them. 7
- (b) Compare oxy-acetylene and plasma arc cutting processes. 7
3. (a) Explain the role and functions of flux used in arc welding processes. 7
- (b) Describe the significance of electrode polarity during arc welding. Discuss. 7

4. (a) What metallurgical changes do you foresee in a typical weld bead and heat affected zone of a fusion weld ? Describe. 7
- (b) Discuss the effect of rate of heat input and the intensity of welding heat source on the structure of a welded joint. 7
5. (a) Explain the advantages, limitations and applications of gas welding process. 7
- (b) Describe the welding defects such as overlap, lack of fusion, lack of penetration, inclusions and spatter. 7
6. (a) Explain joint preparation with particular reference to butt welding of plates using arc welding. 7
- (b) Discuss the importance of destructive testing of welded joints. 7
7. Write short notes on any **four** of the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Resistance Welding
- (b) Plasma Spraying
- (c) Standard location of elements of a welding symbol
- (d) Welding of Ceramics
- (e) Radiographic testing of welded joints