

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

**00716 Term-End Examination  
June, 2015**

**BIMEE-024 : WELDING ENGINEERING**

*Time : 3 hours*

*Maximum Marks : 70*

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

1. (a) Explain Plasma arc welding with a neat sketch. Give its advantages and disadvantages. 7
- (b) Describe with a neat sketch the mechanism of explosive welding. Also write its main applications. 7
2. (a) Explain the principle of generation of LASER. Describe laser beam welding. 7
- (b) Discuss underwater welding. 7
3. (a) Define brazing. Explain how this process is different from soldering and welding. 7
- (b) Describe surfacing. Give its major applications. 7

4. (a) Describe distortion and explain the effect of preheating and post weld heating on distortion. 7
- (b) Define weldability of materials. Mention the factors on which weldability depends. 7
5. (a) Explain ultrasonic and magnetic particle inspection as applied to welds. 7
- (b) Draw symbols and sketches for lap joint, butt joint, edge joint and plug joint. 7
6. (a) Describe the major differences between TIG and MIG processes. 7
- (b) Describe with the help of a neat sketch different structural features of a weld bead. How do the various features of bead geometry affect weld quality? Discuss. 7

7. Write short notes on any *four* of the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Different types of gas welding flames
- (b) Gas cutting
- (c) Destructive testing of welded joints
- (d) Welding defects
- (e) Diffusion welding