

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

Term-End Examination

December, 2017

00942

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 different types of gas welding flames with neat sketches. Give their characteristics and specific applications. 7
- (b) Explain Plasma Arc Welding with a neat sketch. Give its advantages and limitations. 7
2. (a) Explain Explosive Welding and give its applications. 7
- (b) Explain the principle and operation of Laser Beam Welding. 7

3. (a) What do you mean by underwater welding? Describe wet underwater welding process. 7
- (b) Define Soldering. Explain how this process is different from brazing and welding. 7
4. (a) What is Flame Spraying? Classify it and explain any one process. 7
- (b) Name and illustrate the different types of welded joints. 7
5. (a) What metallurgical and morphological changes take place in plain carbon steel weldments? Discuss. 7
- (b) Explain the principle and operation of Electron Beam Welding. 7
6. (a) Define Weldability. What are the effects of alloying elements on weldability of steels? 7
- (b) Enlist all important non-destructive methods of weld inspection. Describe any one of them in detail. 7

7. (a) Describe the salient features of cold pressure welding and give its specific field of application. 7
- (b) List different factors that affect fatigue life of welded components. 7

8. Write short notes on any *four* of the following : $4 \times 3 \frac{1}{2} = 14$

- (a) Plastic and Ceramic Welding
- (b) Diffusion Welding
- (c) Post Weld Heat Treatment Process
- (d) Liquid Penetration Test
- (e) Radiographic Tests
- (f) Ultrasonic Testing
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