No. of Printed Pages : 3

BIMEE-024

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

Term-End Examination

00623

June, 2018

BIMEE-024 : WELDING ENGINEERING

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks.*

1. (a) Explain oxy-acetylene welding process with a neat sketch. 7

(b) Explain the basic principle of resistance welding process. Classify them and give specific applications of each type. 7

2. (a) Explain the process of laser beam welding. 7

(b) What do you mean by underwater welding ? Describe the underwater welding process with a neat sketch. 7

3. (a) Distinguish between soldering and brazing. State their applications. 7

(b) What are the problems involved in welding of aluminium alloys ? Explain the measures to be taken to avoid these problems. 7

4. (a) Describe the aims of post weld heat treatment of welded components. 7

(b) Enlist any four types of non-destructive techniques of weld inspection. Describe any one of them in detail. 7

5. (a) Describe the working principle of explosive welding. Write their applications. 7

(b) Describe with the help of a neat sketch the different structural features of a weld bead. How do the various features of bead geometry affect the weld quality ? Discuss. 7

6. (a) Describe the diffusion bonding process and give its applications. 7

(b) Discuss the different types of coatings in electrodes. 7

7. (a) What tests do you suggest to evaluate the mechanical properties of welded joints ? Explain any one in detail. 7

(b) How do you control the quality of weld ? Discuss. 7

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

(a) Friction Welding

(b) Welding of Plastics

(c) Life Assessment of Weldments

(d) Flame Spraying

(e) Edge Preparation

(f) Weld Symbols