

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- VIth SEMESTER-EXAMINATION – MAY- 2012****Subject code: 162502****Date: 11/05/2012****Subject Name: Welding Technology****Time: 10:30 am – 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define 'welding'. Give the classification of welding processes as per AWS. **07**
(b) Describe with neat sketch the principle, working, advantages and limitations of manual metal arc welding (MMAW). **07**

- Q.2** (a) Draw neat sketch and explain the characteristics and applications of neutral, oxidizing and carburizing flames. **07**
(b) With neat sketch explain butt joint, lap joint and 'T' joint configuration in arc welding. **07**

OR

- (b) What are the advantages of welding process as compared to riveting process? **07**

- Q.3** (a) Describe the principle, working and process parameters of oxy-acetylene welding. **07**
(b) How the molten metal can be protected from atmospheric contamination? Explain. **07**

OR

- Q.3** (a) With reference to DC arc welding, explain following and state their application: **07**
(i) DCSP (ii) DCRP
(b) (i) What type of electrode is used in submerged arc welding process? Why? **07**
(ii) What type of electrode is used in gas tungsten arc welding (GTAW) welding process? Why?

- Q.4** (a) State the types of defects that may occur in weldments. Explain the reasons and remedies of any two defects. **07**
(b) Write a short note on radiography method of weld testing. State its advantages and limitations. **07**

OR

- Q.4** (a) Differentiate between destructive and non-destructive methods of weld testing. Explain magnetic particle testing method with advantages and limitations. **07**
(b) Which power source is used for AC arc welding? State its characteristics. **07**

- Q.5** (a) What is 'heat affected zone'? Is it desirable in welding? How will you treat it? **07**
(b) Explain the principle of resistance welding. Differentiate between spot welding and seam welding. **07**

OR

- Q.5** (a) What are various types of electrodes used for welding processes? Explain the classification of arc welding electrodes. **07**
(b) What is friction welding? Explain the four stages of friction welding process. **07**
