

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII (NEW) EXAMINATION – WINTER 2018

Subject Code: 2181927

Date: 19/11/2018

Subject Name: Advance Welding Technology

Time: 02:30 PM TO 05:00 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) Explain different welding positions with neat sketch **03**
(b) Discuss the design consideration for welding. **04**
(c) Briefly explain the effect of carbon and alloying elements on weldability and microstructure. **07**
- Q.2** (a) Explain mode of solidification of weld metals. **03**
(b) What is HAZ (Heat affected Zone)? How it affects the properties of base metal. **04**
(c) Discuss phase transformation in Fe- C diagrams with neat sketch **07**
- OR**
- (c) Write a short note on: “TTT Diagram” **07**
- Q.3** (a) What is pre heating and interpass heating for weld joint? **03**
(b) Explain types of flames for oxy-acetylene gas welding. **04**
(c) Write a short note on : “Plasma Arc Welding” **07**
- OR**
- Q.3** (a) Explain post heat treatment for weld joint. **03**
(b) With neat sketch explain working principle of Spot welding. **04**
(c) Discuss with neat sketch gas tungsten arc welding (GTAW) process, state the advantages, limitations and applications. **07**
- Q.4** (a) State the advantages and limitations of thermit welding. **03**
(b) With neat sketch discuss laser beam welding. **04**
(c) What is solid state welding? Enlist solid state welding processes and explain one of them. **07**
- OR**
- Q.4** (a) What is the difference among welding, brazing and soldering? **03**
(b) With neat sketch explain electron beam welding **04**
(c) Define resistance welding process and also state advantages, disadvantages, & application of resistance welding process. **07**
- Q.5** (a) Write down steps involved in Dye Penetrate test. **03**
(b) Explain ASME code for Boiler and Pressure Vessels. **04**
(c) Enlist various non destructive testing methods and explain Radiographic inspection method for weld joint. **07**
- OR**
- Q.5** (a) What is API standard and ASTM standard? **03**
(b) Discuss spot examination of weld joint. **04**
(c) Explain magnetic particle inspection method with neat sketch. **07**
