

Seat No.: \_\_\_\_\_

Enrolment No.: \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**DIPLOMA ENGINEERING – SEMESTER –V • EXAMINATION – SUMMER-2017**

**Subject Code: 3355503**

**Date: 6-05-2017**

**Subject Name: Welding Metallurgy**

**Time: 2.30 TO 5.00 PM**

**Total Marks: 70**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Each question carry equal marks (14 marks)

- Q.1 (a) Describe heat flow in and around weld metal with neat sketch. 07  
(b) Draw cooling curve and TTT diagram. Describe about different cooling curve. 07
- Q.2 (a) Describe weldability of low carbon steel and its carbon equivalent. 07  
(b) Draw neat sketch of different zones of steel weld melts as represents on IC diagram. 07
- OR
- (b) Explain weldability of medium carbon steel. 07
- Q.3 (a) List different welding processes used for austenitic stainless steel and describe any one. 07  
(b) Describe knife line attack problem in welding of austenitic steel. 07
- OR
- Q.3 (a) Describe schaeffler diagram with neat sketch. 07  
(b) Explain carbide precipitation problem in welding of austenitic stainless steel suggest its remedies. 07
- Q.4 (a) List out problems Encountered in welding of aluminium and its alloys. 07  
(b) List out steps involved in arc welding of titanium and its alloys. 07
- OR
- Q.4 (a) Describe welding characteristics of aluminium. 07  
(b) Describe the Weldability of HSLA steel. 07
- Q.5 (a) Explain mechanical residual stresses, metallurgical residual stresses and reaction stresses with neat sketch. 07  
(b) Explain concept and types of distortion with neat sketch. 07
- OR
- Q.5 (a) Describe control of residual stresses in weld. 07  
(b) Describe different methods to control of welding distortion. 07

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