

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII • EXAMINATION – SUMMER 2013****Subject Code: 172103****Date: 28-05-2013****Subject Name: Metal Joining Processes****Time: 02.30 pm - 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) Define welding. Discuss the factors which are considered in choosing a welding process for a specific application. **07**
(b) Describe briefly weld pool solidification. **07**

- Q.2** (a) Explain the effect of gases on metal transfer. **07**
(b) Explain different joint design and edge preparation in detail with neat sketch. **07**

OR

- (b) What is arc welding? Explain characteristics of arc. **07**

- Q.3** (a) Briefly discuss how residual stresses and distortion occur in welded structures? How this stress could be minimized and eliminated? **07**
(b) Explain how gas-metal and slag-metal reactions takes place in welding. **07**

OR

- Q.3** (a) Explain SAW with a neat sketch. **07**
(b) List different methods for arc initiation. Explain GTAW process. **07**

- Q.4** (a) Explain the principle of laser beam welding with a neat diagram **07**
(b) What do you mean by plasma? Explain plasma welding with a neat sketch. **07**

OR

- Q.4** (a) What is electroslag welding? Explain its operation in detail. **07**
Q.4 (b) Discuss different types of flames in gas welding. **07**

- Q.5** (a) List the types of resistance welding. Compare resistance butt and flash butt welding. **07**
(b) Define soldering. Write in brief about Soldering alloys and it's applications. **07**

OR

- Q.5** (a) Explain the phenomena of weld cracking. **07**
(b) Define Brazing . Write in brief about Soldering alloys and it's applications **07**
