

III B.Tech I Semester Supplementary Examinations, May 2005
TECHNIQUES OF METAL JOINING
(Metallurgy & Material Technology)

Time: 3 hours

Max Marks: 70

Answer any FIVE Questions
All Questions carry equal marks

1. (a) What is welding? What are its applications?
(b) Distinguish between oxydising flame and reducing flame in oxy-acetylene welding process. What are their applications?
(c) Compare the advantages and disadvantages of Arc welding and gas welding.
2. (a) Discuss the factors that favour the arc initiation, arc maintenance and arc stability. Suggest suitable ingredients added in coating for above purpose.
(b) Explain the relative merits and demerits of AC arc welding and DC arc welding.
3. (a) Describe the submerged arc welding process with suitable sketch and give current range, electrode sizes, metals welded and metal deposition rates.
(b) Discuss the solidification of welds.
4. (a) Explain spot welding process with the help of sketches discuss the principle involved.
(b) Describe the electron beam welding process with a suitable sketch. Discuss the methods of beam focusing for electron gun. Give also advantages, applications and metals welded.
5. State in each case two difficulties that may arise during the Tungsten arc welding of
 - (a) Stainless steel
 - (b) Aluminium
 - (c) Copper
6. Explain with sketches the following types of weld defects.
 - (a) undercut
 - (b) Lack of fusion
 - (c) Lack of penetration
 - (d) Porosity

What are the causes and remedies for the above with respect to arc welding.

7. (a) Distinguish between soldering and Brazing.

- (b) Describe the scope, technique and nature of bond formation during soldering and Brazing.
8. Write short notes on THREE of the following:
- (a) Braze welding.
 - (b) ISI code for welding electrodes.
 - (c) Joining of dissimilar alloys.
 - (d) Plasma arc welding.

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