



# 17455

11819

3 Hours / 100 Marks

Seat No.

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- Instructions :** (1) *All questions are compulsory.*  
(2) *Illustrate your answers with neat sketches wherever necessary.*  
(3) *Figures to the right indicate full marks.*

**Marks**

1. Attempt **any five** : **(5×4=20)**
- Draw four basic types of weld joint designs.
  - Explain the three types of flames in oxyacetylene welding.
  - Explain the arc structure and mechanism of arc formation.
  - Define weldability and enlist four factors affecting it.
  - Explain the welding of cast iron.
  - How properties of welding joint is affected by alloying elements ?
  - Explain the principle of brazing.
  - Describe the soldering joint preparation process.
2. Attempt **any two** : **(2×8=16)**
- Explain the oxyacetylene welding process with neat sketch. Give any two advantages.
  - Enlist various fluxes used in welding. What are the functions of these fluxes.
  - Give difference between soldering brazing and welding.
3. Attempt **any two** : **(2×8=16)**
- Explain the welding of mild steel. Which process is used and why ?
  - Enlist the different processes used for welding of alloy steel, explain any one.
  - Describe TIG welding associated with welding of Aluminium. State any two problems occurred while doing welding of Aluminium.
4. Attempt **any two** : **(2×8=16)**
- Explain the various positions of welding.
  - Explain the dimensional defects in welding and give their causes (any four).
  - Classify various brazing processes. Explain carbon arc process with sketch and give applications.

**P.T.O.**

**Marks****5. Attempt any two :****(2×8=16)**

- a) Explain the four factors affecting selection of power sources with explanation.
- b) What is the effect of electrode sizes on welding joints ? What care is required for storage of electrodes ?
- c) Explain the metal transfer mechanisms with simple sketches.

**6. Attempt any two :****(2×8=16)**

- a) Explain the reason and remedy for
    - i) Porosity
    - ii) Slag inclusion
    - iii) Undercut
    - iv) Cracks in welding.
  - b) Draw and explain HAZ for M.S.
  - c) Define heat treatment. How heat treatment is useful in controlling the properties of weld joints ? Explain the process with steps involved.
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