

# 17621

**15116**

**3 Hours / 100 Marks**

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.  
(2) Answer each next main Question on a new page.  
(3) Illustrate your answers with neat sketches wherever necessary.  
(4) Figures to the right indicate full marks.  
(5) Assume suitable data, if necessary.  
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

**1. Attempt any TEN of the following:**

**20**

- Enlist the base metals welded by TIG welding.
- Why must the base metals be cleaned prior to TIG welding?
- What is function of shielding gases in MIG welding?
- State the definition of “MIG” welding.
- What do you mean by flux-cored electrode?
- State briefly the concept of electroslog welding.
- State the meaning of “PLASMA” for plasma welding.
- Define the term “LASER welding”.
- List the various process control parameters for resistance welding.

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- j) What do you mean by distortion of welded part?
- k) Suggest correct method to repair-
  - (i) Rail Track
  - (ii) Broken large gear thrash.
- l) List the common weldable plastic materials.
- m) State the surface preparation for plastic material before welding.
- n) List any two structural welding codes.
- o) State contents in WPS.

**2. Attempt any FOUR of the following: 16**

- a) Compare various shielding gases used in TIG welding.
- b) Differentiate between flux-cored arc and MIG welding.
- c) Draw working set-up diagram of plasma welding and label the equipments.
- d) Describe fundamentals of resistance welding with neat sketch.
- e) Explain any two types of distortions with suitable diagram.
- f) State advantages of welding robots as new trends in welding.

**3. Attempt any FOUR of the following: 16**

- a) Explain wire feed mechanism for MIG welding with neat sketch.
- b) Describe weld backing techniques for submerged arc welding.
- c) Describe main characteristics of electroslog welding.
- d) Explain principle working of “LASER BEAM” welding.
- e) Explain various type of resistance welding with examples.
- f) State meaning of API 1104 and BS 4515-1.

- 4. Attempt any FOUR of the following:** **16**
- a) Describe Automatic Welding with neat sketch.
  - b) Describe the process of MIG Welding.
  - c) Describe submerged arc welding with respect to flux hopper, flux and electrodes.
  - d) Explain characteristics of flux cored electrode in FCAW.
  - e) Differentiate between ultrasonic and diffusion welding.
  - f) Explain Pedestal Boom Manipulator in latest welding.
- 5. Attempt any FOUR of the following:** **16**
- a) Explain principle of operation for TIG welding.
  - b) Write advantages and limitations of submerged arc welding. (any two)
  - c) Differentiate between conventional and consumable electroslag welding.
  - d) Describe the process of thermit welding.
  - e) Explain welding characteristics during welding of alloys steels.
  - f) List the different items that can be recorded in WPS.
- 6. Attempt any FOUR of the following:** **16**
- a) Write disadvantages and applications of TIG welding.
  - b) Draw welding set-up for automatic hydrogen welding.
  - c) State any four advantages of Resistance welding.
  - d) Describe any two methods to control of welding distortion.
  - e) What do you mean by “Computer aided welding design”?
  - f) Explain the meaning of process equipment codes.
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