

# 17211

21415

2 Hours / 50 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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

1. Attempt any NINE of the following :

**18**

- (a) Write the two ores of copper with their chemical formulae.
- (b) What are the constituents of copper matte ?
- (c) Write two uses of aluminium.
- (d) Define immersed corrosion.
- (e) State the two functions of pigment.
- (f) Draw neat and labelled diagram for application of metal on an article by galvanizing process.
- (g) What are applications of sherardizing process ? (Two points)
- (h) Define the terms :
  - (i) Specific conductance
  - (ii) Equivalent conductance
- (i) Write two points to differentiate between primary cell and secondary cell.
- (j) State two uses of electrically conducting polymer.
- (k) State two applications of silicone fluids.
- (l) Write two applications of phenol formaldehyde resin as adhesives.

**P.T.O.**

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

- (a) How copper is obtained from its ore by smelting process ? Write it with labeled diagram.
- (b) Write the purification of aluminium with labelled diagram by electrolytic refining.
- (c) State composition, properties and applications of Tinmann's solder or rose metal.
- (d) Write four properties and applications of urea-formaldehyde resin.
- (e) Give construction, working and applications of Dry cell.
- (f) Write chemical reactions taking place during charging and discharging of lead acid cell.

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

- (a) Define atmospheric corrosion. Write mechanism when oxygen attacks on a metal.
  - (b) Describe the hydrogen evolution mechanism of immersed corrosion.
  - (c) Describe metal spraying process for protection of metal from corrosion. Write its two applications.
  - (d) Write construction and working of Ni-Cd cell with labelled diagram.
  - (e) Give construction and working of hydrogen-oxygen fuel cell.
  - (f) Write discharging and charging process of lead acid storage cells.
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