

17211

16117

2 Hours / 50 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.
- (4) Assume suitable data, if necessary.
- (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
- (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.
- (7) Use of Steam tables, logarithmic, Mollier's chart is permitted.

Marks

1. **Attempt any NINE of the following:** **18**
- a) Write any four uses of aluminium.
- b) State the composition of Rose metal.
- c) Give the general flow chart for the extraction of metal from its ore.
- d) Define corrosion. Mention the types of corrosion.
- e) Define colorizing.
- f) Explain cathodic protection. Give one example.
- g) Define paint. Give its two properties.
- h) Explain fuel cell. State two advantages.
- i) Draw labelled diagram of dry cell.

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- j) Write the difference between dielectrics and insulator.
- k) Give two application of epoxy resins.
- l) Define glass. Give its two characteristics.

2. Attempt any FOUR of the following: 16

- a) Describe the process of smelting of copper ore with labeled diagram.
- b) Explain the electrolytic refining of aluminium.
- c) Write composition properties and application of Woods metal.
- d) Give two properties and corresponding applications of teflon.
- e) Write charging and discharging chemical reactions of lead acid storage cell.
- f) With the help of a sketch describe the construction and working of a Daniel cell.

3. Attempt any FOUR of the following: 16

- a) Write the mechanism of corrosion of metal due to action of oxygen.
 - b) Explain metal cladding with neat labelled diagram.
 - c) Define cementation. Explain sherardizing process.
 - d) Classify electro chemical cells. Give examples of each type.
 - e) Explain the construction and working of Hydrogen-Oxygen fuel cell.
 - f) Define the following electrolyte, conductivity of electrolytes, specific conductance and equivalent conductance.
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