



17208

21314

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**.
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MARKS

1. Attempt **any nine** :

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- Name the ores of iron. Write their chemical formulae.
- Define the terms :
 - Metallurgy
 - Slag.
- Write the four properties of mild steel.
- Define corrosion. Give its types.
- Write any two characteristics of ideal paint.
- Distinguish between galvanizing and tinning.
- Write two applications of electroplating.
- Name the types of impurities in natural water.
 - Write two advantages and two disadvantages of Zeolite process.
 - Draw the diagram of reverse osmosis cell for desalination of seawater.
- Name the constituent of Portland Cement.
 - What is slacked lime ? Give the reaction.

2. Attempt **any four** :

16

- Write the chemical reaction in the zone heat absorption for extraction of iron in blast furnace.
- Define heat treatment properties of steel. Explain hardening.

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- c) Give difference between pig iron, wrought iron and steel.
- d) Describe the mechanism of electrochemical corrosion by absorption of oxygen.
- e) Define atmospheric corrosion. Which oxide film is protective ? Why ?
- f) State and explain metal cladding process with diagramme.

3. Attempt **any four** :

16

- a) Explain ion exchange process of water softening with labeled diagram and write chemical reactions.
 - b) Write two disadvantages each of using hard water textile and dyeing industry.
 - c) What are bad effect of using hard water in boiler unit ?
 - d) Write quality parameter for potable water.
 - e) Describe chlorination process with chemical reaction by using chlorine gas and bleaching powder. Write its advantages.
 - f) Define Portland Cement, write its composition. Explain the function of gypsum in cement.
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