



17203

16172

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) *Assume suitable data, if necessary.*
 - (6) *Use of Non-programmable Electronic Pocket Calculator is permissible.*
 - (7) *Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.*

Marks

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

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- a) Write sequential steps involved in extraction of iron from its ore.
- b) What are the products of blast furnace ?
- c) Define hardening. State its two purposes.
- d) Give two applications of Alnico.
- e) Define corrosion. Write its types.
- f) State the types of oxide films in corrosion. Name more protective oxide film.
- g) Define paint. Write two constituents of paints.
- h) Why galvanised containers are not used to store food stuff ?
- i) Define calorific value and ignition temperature.
- j) Give two purposes of proximate analysis.
- k) Write two applications of biogas.
- l) Define lubricant. Write its types.

2. Attempt **any four** of the following :

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- a) Write chemical reaction taking place in the zone of reduction of blast furnace.
- b) How is the steel prepared from pig iron using open hearth process ?
- c) Differentiate between annealing and normalising.
- d) Write the four characteristics of good fuel.
- e) Explain the process of determining percentage of moisture and volatile matter in coal sample by proximate analysis.
- f) Write composition, properties and applications of LPG.

P.T.O.



3. Attempt **any four** of the following :

- a) Explain hydrogen evolution mechanism of electrochemical corrosion.
 - b) Distinguish between galvanising and tinning.
 - c) Describe sherardising process for protection of small articles of iron from corrosion. Write its two applications.
 - d) Define following properties of lubricant :
 - i) Flash point
 - ii) Fire point
 - iii) Oiliness
 - iv) Viscosity index
 - e) Explain the boundary lubrication process with diagram.
 - f) Select the lubricants for following mechanical jobs
 - i) Sewing machine
 - ii) Road rollers
 - iii) Cutting tools
 - iv) Gears
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