

17203

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) 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 NINE :

18

- (a) Give various zones of reactions in blast furnace with their temperature range.
- (b) What are the products of blast furnace ?
- (c) Write composition of ALNICO.
- (d) Define Heat treatment.
- (e) Define atmospheric corrosion.
- (f) Why gold does not get corroded in air ?
- (g) What are the constituents of the paint ?
- (h) Why galvanized containers are not used to store the food stuffs ?
- (i) List any two advantages of gaseous fuels over solid fuels.
- (j) State any two properties of bio-diesel.
- (k) Write the composition of biogas.
- (l) Define viscosity index and cloud point.

P.T.O.

2. Attempt any FOUR :**16**

- (a) Explain stepwise chemical reaction taking place in zone of reduction of blast furnace.
- (b) Write the effect of alloying elements carbon and chromium on properties of steel.
- (c) Differentiate between annealing normalizing.
- (d) List any four characteristics of a good fuel.
- (e) State composition properties and applications of CNG.
- (f) Write the process of determining percentage of moisture and volatile matter in coal sample by proximate analysis.

3. Attempt any FOUR :**16**

- (a) Explain stepwise mechanism of electrochemical corrosion by evolution of hydrogen gas.
 - (b) Differentiate between Galvanising-Tinning.
 - (c) Name and explain the method used to coat small and irregular shaped articles.
 - (d) State four functions of lubricant in mechanical industry.
 - (e) Name the lubrication done for heavy load and slow speed and write its stepwise mechanism with neat labelled diagram.
 - (f) Select the lubricants for following mechanical jobs :
 - (i) Internal combustion engines
 - (ii) Sewing machines
 - (iii) Rail axel boxes
 - (iv) Cutting tools
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