

17203

15162

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) Write any two ores of iron with chemical formula.	2
(b) What are the products of blast furnace ?	2
(c) State any two purposes of hardening.	2
(d) Why is an alloying element nickel added to steel ?	2
(e) Define corrosion and state it's types.	2
(f) State and explain the factors affecting rate of atmospheric corrosion.	2
(g) List any four constituents of paint.	2
(h) Give reason why galvanized containers are not used for storing food stuffs.	2
(i) Classify fuel with suitable examples of each.	2
(j) Write any two disadvantages of solid fuels.	2
(k) State two applications of Bio-diesel.	2
(l) Define Lubrication. Name the types of lubrication.	2

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- 2. Attempt any FOUR :** **16**
- (a) Write the chemical reactions taking place in zone of reduction of blast furnace. **4**
 - (b) Write two properties and two uses of magnetic steel. **4**
 - (c) How steel is classified on the basis of carbon content ? Give composition, properties and uses of different carbon steels. **4**
 - (d) Write composition and properties of bio-gas. **4**
 - (e) With the help of labelled diagram, illustrate various fractions obtained during refining of crude petroleum. **4**
 - (f) State any four characteristics of good fuel. **4**
- 3. Attempt any FOUR :** **16**
- (a) Explain the mechanism of immersed corrosion with evolution of hydrogen gas. **4**
 - (b) Name and explain the process of coating small and irregular shaped iron articles to protect from corrosion. **4**
 - (c) Distinguish between galvanizing and tinning. **4**
 - (d) Suggest the type of lubricant used for the following jobs : **4**
 - (i) Clock
 - (ii) Cutting tools
 - (iii) Sewing machine
 - (iv) Gears
 - (e) State and explain the type of lubrication done for machines working under heavy load and at slow speed. **4**
 - (f) Define the terms : **4**
 - (i) Flash point
 - (ii) Fire point
 - (iii) Acid value
 - (iv) Emulsification
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