

17227

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) Figures to the right indicate full marks.
 (4) Assume suitable data, if necessary.

Marks**1. Answer any SEVEN :****7 × 2 = 14**

- Define : (i) rust, (ii) corrosion.
- Explain why metals are electroplated. Give examples.
- State two prime functions of points.
- Define : (i) Gross calorific value, (ii) net calorific value.
- State significance of proximate analysis.
- Explain how water acts as a lubricant.
- State uses of silicone oils as lubricants.
- Define : (i) oildag (ii) aquadag.
- Define a buffer. Name types of buffer.
- Define : (i) B.O.D., (ii) C.O.D.

2. Answer any FOUR :**4 × 3 = 12**

- Name types of oxide films, formed on corrosion of metal. Which of them gives best protection against corrosion ? Explain.
- Compare : tinning and galvanising.
- Write procedure for estimation of 'fixed carbon' in solid fuel.
- Define 'biogas'. State its advantages.
- Write selection criteria of lubricants for I.C. engine. Name a suitable lubricant.
- Explain principle of estimation of chlorides in water.

3. Answer any FOUR :**4 × 3 = 12**

- (a) Describe two methods of protection of metal from corrosion.
- (b) Write characteristics of a good fuel.
- (c) Write typical boiling range, composition and application of gasoline, heavy oil.
- (d) Compare : Flash point and fire point.
- (e) Outline ozonisation method of disinfection of water.
- (f) Compare zeolite process and ion exchange process used to soften hard water.

4. Attempt any FOUR :**3 × 4 = 12**

- (a) Explain mechanism of immersed corrosion.
 - (b) Draw Bomb's calorimeter. Explain its working.
 - (c) Write main constituents of LPG. State disadvantages of LPG over gasoline as a gaseous fuel.
 - (d) Describe with a diagram, boundary lubrication.
 - (e) Outline 'reverse osmosis' method of softon water.
 - (f) Explain why the use of two metals be avoided.
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