17339

16117

3 Hours / 100 Marks Seat No. | | | | | | | | |

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. Attempt any TEN : **20**

(a) What is reverse osmosis ?

(b) Define :

(i) temporary hardness

(ii) permanent hardness

(c) Define viscosity of a liquid. State effect of temperature on viscosity.

(d) Define carbohydrates. Name types of carbohydrates.

(e) Differentiate between fats and oils.

(f) Define the terms :

(i) Surface tension

(ii) Interfacial tension

(g) Define a fuel. Give two examples of gaseous fuel.

(h) Define :

(i) Net calorific value

(ii) Gross calorific value of a fuel

(i) Define electroplating.

(j) Define corrosion. Why is it a wasteful process ?

(k) Give an example of titration, through precipitation. Write the reaction involved.

(l) Define volumetric analysis.

(m) What are co-ordination compounds ? Give two examples.

(n) Write any two use of hydrochloric acid.

2. Answer any FOUR : **16**

(a) Explain scale-and sludge-formation in a boiler.

(b) State chemical properties of starch paste.

(c) Describe water hydrolysis of oils.

(d) State characteristics of a good quality fuel.

(e) Explain the role of galvanising in corrosion prevention.

(f) Explain primary and secondary standards, giving examples.

3. Answer any FOUR : **16**

(a) How will you remove suspended impurities from water ?

(b) Explain the chemical structure of starch and cellulose.

(c) What is saponification value of an oil ? Why is saponification value = ester value + acid value ?

(d) Compare giving examples : Solid fuel & liquid fuel.

(e) Explain comlexometric and redox titration.

(f) Write the properties and textile applications of sulphuric acid.

4. Answer any FOUR : **16**

(a) What is disinfection ? Explain the role of any two disinfecting agents.

(b) Write any two chemical properties of cellulose.

(c) Explain wetting property and foaming property of soap.

(d) Explain oxygen absorption mechanism of electrochemical corrosion.

(e) Define the term accuracy and precision giving their formulae.

(f) Write any four assumptions of Werner's co-ordination theory.

5. Answer any FOUR : **16**

(a) Write the role of dissolved oxygen in determining quality of water.

(b) Describe the process of hydrogenation of oil. Name two oils which are usually hydrogenate.

(c) How will you prevent corrosion by proper designing and selection of material ?

(d) Explain the uses of important sequestering agents in textiles.

(e) Write the factors that affect the stability of a complex ion.

(f) Write chemical properties of sodium hydroxide.

6. Answer any FOUR : **16**

(a) Describe the ion exchange process of water softening.

(b) Explain the factors affecting corrosion rate.

(c) Define 'cementation'. Explain the importance of cementation method in corrosion prevention.

(d) What are chelates ? Explain giving examples.

(e) Write the chemical properties and uses of sodium carbonate in different industries.

(f) State the role of sodium hydroxide and hydrochloric acid in textiles.
