14115

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****. Abbreviations used convey usual meaning.*

MARKS

1. Answer **any ten** :   **(10×2=20)**

   a) Name common impurities present in the water.

   b) Define temporary and permanent hard water.

   c) Write about gelatinising property of starch.

   d) Explain action of oxidising agent on cellulose.

   e) State the role of soap and detergents in textile wet processing.

   f) Explain the terms :

      i) Surface tension,

      ii) Foaming.

   g) Define calorific value. Give its unit.

   h) Write the causes of corrosion.

   i) Define paint. Name colouring constituent of paint.

j) Explain the terms qualitative and quantitative analysis.

k) Name the types of titration.

l) List the factors affecting the stability of complex ions.

m) Write the uses of important sequestering agents in textiles.

n) State the applications of chemicals used in textile industry.

2. Answer **any four** :   **(4×4=16)**

a) Explain the bad (ill) effects of using hard water on textile.

b) Describe ion exchange process with a suitable diagram.

c) Write the disadvantages of scale and sludge formation in boiler.

d) Explain a method of removal of micro-organisms from water.

e) Explain the term BOD and COD with suitable examples.

f) Represent the classification of carbo-hydrates; giving an example of each class.

3. Answer **any four** :   **(4×4=16)**

a) Write the action of enzymes on starch with an example.

b) Explain the structure of cellulose.

c) Explain action of acid and alkali on cellulose.

d) Describe a method to determine saponification value of an oil with a suitable diagram.

e) Explain the chemical properties :

  i) Water hydrolysis

  ii) Alkali hydrolysis of an oil.

f) Explain chemical nature of oils and fats.

4. Answer **any four** : (4×4=16)

a) Explain the properties soap solution as an colloidal electrolyte.

b) Write the characteristics of a good fuel.

c) Write the classification of fuel. Give two examples of each class.

d) Distinguish between dry corrosion and wet corrosion.

e) Explain the factors affecting the rate of corrosion.

f) Explain galvanising method to protect iron articles from corrosion with a suitable diagram.

5. Answer **any four** : (4×4=16)

a) Describe metal cladding process with a diagram.

b) Explain the mechanism of atmospheric corrosion.

c) List the methods of chemical analysis. Explain any one of them.

d) Describe precipitation titration method. Give a specific example.

e) Explain the terms :

  i) Accuracy

  ii) Precision.

f) Explain acid-base titration with a suitable example.

6. Answer **any four** : **(4×4=16)**

   a) Explain factors affecting the stability of co-ordination compounds.

   b) Describe Werner's co-ordination theory.

   c) Distinguish between co-ordination compound and co-ordination number.

   d) Write the applications of hydrochloric acid and sodium hydroxide in textile industry.

   e) Explain the chemical properties of sulphuric acid with chemical reactions.

   f) Describe the chemical properties of sodium carbonate with chemical reactions.

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