17339

15116

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) Abbreviations used convey usual meaning.

Marks

1. Answer any FIVE : **5 × 4 = 20**

(a) (i) Define ‘soft water’.

(ii) Define ‘temporary hardness’ of water. Write the reaction to show as to how this hardness can be destroyed.

(b) (i) Represent structural formula of cellulose. To which sub-class of carbohydrates, it belongs to ?

(ii) Define ‘oligosaccharides’. Write its sub-classification.

(c) State properties of starch paste.

(d) Define a ‘paint’. How does it help to give protection against corrosion ?

(e) Describe metal-cladding.

(f) Explain with an example, use of EDTA, in complexometry titration.

(g) Define ‘sequestering agent’. Explain their use in textiles.

2. Answer any TWO : **2 × 8 = 16**

(a) (i) Explain principle of Reverse Osmosis (RO). Draw a simple RO-cell.

(ii) What is ‘alkalinity’ of water due to ? Write stepwise procedure to estimate it.

(b) Explain :

(i) Selection and design aspects,

(ii) External current method

to control corrosion.

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(c) (i) Define :

(1) Co-ordination compound,

(2) Co-ordination number

(ii) Describe Werner's co-ordination theory.

3. Answer any TWO : **2 × 8 = 16**

(a) Explain with reaction :

(i) hydrogenation of oils,

(ii) water – hydrolysis of oils.

(b) Explain with an example :

(i) redox titration,

(ii) titration through precipitation.

(c) (i) Sulphuric acid is a strong dehydrating agent. Explain with an example.

(ii) Write uses of hydrochloric acid in textiles.

4. Answer any TWO : **2 × 8 = 16**

(a) Describe :

(i) 'gelatinisation' of starch,

(ii) keeping properties' of starch.

(b) (i) Define :

(1) gross calorific value,

(2) lower calorific value

State unit of calorific value for liquid fuel and gaseous fuel.

(ii) Compare solid and liquid fuels.

(c) Explain factors affecting stability of complex ions and co-ordination compounds.

5. Answer any TWO : **2 × 8 = 16**

(a) (i) Define two units of hardness of water. Write relationship between them.

(ii) Explain scale formation in boilers.

(iii) State disadvantages of scale formation.

(iv) Name two methods to prevent scale formation.

(b) Describe wetting and detergent properties of soap.

(c) (i) State factors affecting corrosion.

(ii) Explain ‘dry-corrosion’.

6. Answer any FOUR : **4 × 4 = 16**

(a) Define ‘priming’. How is it caused ? How can it be avoided ?

(b) Explain effect of oxidizing agent on cellulose.

(c) Define :

(i) an oil,

(ii) wax,

(iii) soap,

(iv) surface tension

(d) Write ‘applications’ of fuels in textile industry.

(e) Compare :

(i) accuracy and precision,

(ii) primary and secondary standard.

(f) Explain use of sodium carbonate in textiles.

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