

C-444

CHEMISTRY 2014

Time : 3 Hours |

Class : 12th

| M. M. : 75

Instructions: (i) All questions are compulsory. (ii) Read the instructions of question paper carefully and write their answers. (iii) There are two Sections-Section-A and Section-B in the question paper. (iv) In Section-A Q. 1 to 4 are objective type questions which contain fill up the blanks, one word answer, match the columns and choose the correct answer. Each question carries 5 marks. (v) Internal choices are given in Q. Nos. 5 to 18 in Section B. (vi) From Q. Nos. 5 to 8, each question carries 2 marks. Answer each question in maximum 30 words. (vii) From Q. Nos. 9 to 13, each question carries 4 marks. Answer each question in maximum 75 words. (viii) From Q. Nos. 14 to 16 each question carries 5 marks. Answer each question in maximum 120 words. (ix) From Q. Nos. 17 and 18, each question carries 6 marks. Answer each question in maximum 150 words.

Section-A (Objective Type Questions)

1. Choose the correct option : 5 × 1 = 5
- (i) Process of rusting of iron is :
- (a) Oxidation (b) Reduction
- (c) Corrosion (d) Polymerization

- (ii) Calomel is :
 (a) Hg_2Cl_2 (b) HgCl_2
 (c) $\text{Hg}_2\text{Cl}_2 + \text{Hg}$ (d) $\text{Hg} + \text{HgCl}_2$
- (iii) Oxidizing property is highest of :
 (a) I_2 (b) Br_2
 (c) F_2 (d) Cl_2
- (iv) Vitamin B_1 is :
 (a) Riboflavin (b) Ascorbic acid
 (c) Cobalamin (d) Thymine
- (v) $\text{C}_6\text{H}_5\text{N}_2\text{Cl} \xrightarrow[\text{HCl}]{\text{CuCl}} \text{C}_6\text{H}_5\text{Cl}$ is :
 (a) Gattermann's reaction (b) Sandmeyer's reaction
 (c) Wurtz's reaction (iv) Frankland's reaction

2. Fill in the blanks : $5 \times 1 = 5$

- (i) The process of adding minute amount of impurity in an element or compound is called
- (ii) inert gas is mostly used in advertisements.
- (iii) Haemoglobin is a compound of iron.
- (iv) Oils and fats obtained from plants and animals are called
- (v) On heating alkyl isocyanide to 250°C is formed.

3. Match the pairs correctly (Choose the correct answer from Section 'B' for Section 'A') : $5 \times 1 = 5$

Section 'A'

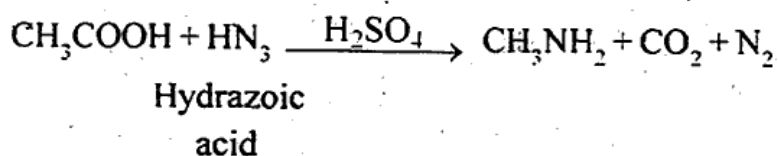
Section 'B'

- | | |
|-----------------------------|------------------------|
| (a) Emulsion | (i) NaCl |
| (b) Body-centred cubic cell | (ii) Lyophilic colloid |
| (c) Gold No. | (iii) AgBr |
| (d) Schottky defect | (iv) Lyophobic colloid |
| (e) Frenkel defect | (v) CsCl |
| | (vi) FeCl_2 |
| | (vii) Milk |

4. Write answers in one word of each : $5 \times 1 = 5$

- (i) For a zero order reaction $t_{1/2}$ is proportional to what?
- (ii) Write the name of redioactive halogen?
- (iii) What types of isomer are $[\text{Co}(\text{NH}_3)_5\text{Br}]\text{SO}_4$ and $[\text{Co}(\text{NH}_3)_5\text{SO}_4]\text{Br}$?
- (iv) Which protein is responsible for the clotting of blood?

(v) Write the name of reaction :



Section-B (Very Short Answer Type Questions)

5. What is Tyndall effect? 2
(Or) What is peptization?
6. Fluorine always shows -1 oxidation state. Why? 2
(Or) Ionization energy of noble gas is very high. Why?
7. Write IUPAC name of the following complex compounds : 2
(i) $[\text{Ni}(\text{CO})_4]$ (ii) $\text{K}_2[\text{HgI}_4]$.
- (Or) What are organometallic compounds? Write an example.
8. Write two differences between D.N.A. and R.N.A.
(Or) Write the functions of the following vitamins:
(i) Vitamin A (ii) Vitamin B (iii) Vitamin E (iv) Vitamin K

(Short Answer Type Questions)

9. Write four differences between molecularity and order of reaction.
(Or) Write four differences between rate of reaction and rate constant.
10. Draw the labelled diagram of electrolytic cell of alumina and write the chemical reactions taking place in it. 2 + 2 = 4
(Or) Draw the labelled diagram of vertical retort method used in extraction of zinc and write only equation of chemical reaction in the extraction of zinc from zinc blende. <http://www.mpboardonline.com>
11. Write the following reactions : 4
(i) Carbylamine reaction (ii) Iodoform reaction
(iii) Frankland reaction (iv) Fittig reaction.
- (Or) Give method of preparation, properties and uses of Freon.
12. Differentiate between Primary, Secondary and Tertiary alcohol by Victor Meyer method. 4
(Or) How can the following compounds be obtained from phenol? Give equation :
(i) 2, 4, 6-Tribromophenol (ii) 2, 4, 6-Trinitrophenol
(iii) Benzene (iv) Ortho- and para-cresol.
13. Write short notes on the following : 4
(i) Claisen condensation (ii) Benzoin condensation.
(Or) Describe the method for the preparation of acetone in laboratory and give the chemical equation with labelled diagram.

(Long Answer Type Questions)

14. What is standard hydrogen electrode? How is it prepared? Explain with labelled diagram. 3 + 2

(Or) (i) What is specific conductivity? What is its relation with specific resistance? What is its unit?

(ii) Write Ohm's law.

15. Explain the hydrides of nitrogen family under the following points :

(i) Name and formula (ii) Basic property

(iii) Reducing property (iv) Bond angle

(v) Meltig and Boiling point.

(Or) Explain the hydrides of oxygen family under the following points :

(i) Name and formula (ii) Thermal stability

(iii) Reducing property (iv) Acidic property

(v) Covalent character.

16. Explain the following with one-one example : 5

(i) Antiseptic (ii) Antacid

(iii) Sulpha drug (iv) Antifertility

(v) Antipyretic.

(Or) Write short notes on the following :

(i) Nalanda University (ii) Charak.

17. (1) Define the following :

(i) Molarity

(ii) Molality

(2) Determine the molarity of a solution of 4.0 gram per litre concentration of NaOH. 6

(Or) (1) Define the following:

(i) Henry's law

(ii) Normality.

(2) If 2 gram NaOH is present in 250 ml solution, then determine the normality of the solution.

18. Explain : 6

(1) Transition elements mostly form the complex compound. Why?

(2) Transition elements are good catalyst. Why?

(3) Transition elements show variable valency. Why?

(Or) Write any six main differences between d and f-block elements.