

CHEMISTRY - 2013

Time : 3 Hours]

Class : 12th

[M. M. : 75

- Note-
- (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. Nos. 1 to 4 are objective type questions which contains choose the correct answers, match the columns, fill up the blanks and one word answer. Each question carries 5 marks.
 - (v) Internal choices are given in Q. Nos. 5 to 17 of Section- B.
 - (vi) Q. Nos. 5 to 14 carry 4 marks each.
 - (vii) Q. Nos. 15 to 17 carry 5 marks each.

(Section - A)

(Objective Type Questions)

Q. 1. Write the correct answer from the given options which provided in every objective type question:

- (A) Which of the following is ferromagnetic?
 - (i) Calcium metal
 - (ii) Iron metal
 - (iii) Sodium metal
 - (iv) Zinc metal
- (B) Silicon is:
 - (i) Good conductor
 - (ii) Bad conductor
 - (iii) Semiconductor
 - (iv) Ore
- (C) The crystal lattice of NaCl is:
 - (i) Face-centered cubic lattice
 - (ii) Body-centered cubic lattice
 - (iii) Simple cubic lattice
 - (iv) Hexagonal close packing
- (D) Which kind of point defect is found in KCl crystal?
 - (i) Frenkel
 - (ii) Schottky
 - (iii) Linear
 - (iv) Impurity
- (E) Brass is:
 - (i) Solid solution
 - (ii) Liquid solution
 - (iii) Gas solution
 - (iv) All of these

Q.2. Match the pairs correctly (choose the correct answer from Section 'B' for Section 'A'):

Section 'A'	Section 'B'
(A) One Faraday	(i) H_2SO_4
(B) Arrhenius equation	(ii) HF
(C) Haematite	(iii) 96500 coulombs
(D) Contact process	(iv) $K = Ae^{-E_a/RT}$
(E) Noble gas	(v) Iron
	(vi) $\text{H}_2\text{S}_2\text{O}_8$
	(vii) Group 18

Q.3. Fill in the blanks:

- (A) 'f' block elements are known as..... elements.
- (B) The basic character of Amine is due to the presence of on Nitrogen atom.
- (C) Starch is saccharide.
- (D) The substance which lowers the acidity of stomach is called.....
- (E) Catalysts which increase rate of a reaction are called catalyst.

Q.4. Write answers in one sentence each:

- (i) Who used the word 'catalyst' for the first time?
- (ii) Why does colloidal particle show Tyndall effect?
- (iii) Cleansing action of soap based on which principle?
- (iv) Why does aniline turn blackish brown in open air?
- (v) What is the main product of mustard oil reaction?

(Section-B)

(Very Short Answer Type Questions)

Q.5. Write short notes on:

- (i) Activation energy
- (ii) Arrhenius equation. (Or)

A first order reaction is completed 90% in 40 minutes. Calculate its half-life period. ($\log 10 = 1$)

Q.6. Explain Siemens- Martin's open hearth process for the manufacture of steel with diagram. (Or)

What is Blue Vitriol? Write effect of heat on it.

- Q. 7. Describe Brodie's ozonizer with diagram (Or)
Bleaching of flowers by Cl_2 is permanent while bleaching by SO_2 is temporary. Why?
- Q. 8. Xenon is a noble gas but it forms compounds, why? Draw the structure of any two compounds of it. (Or)
Explain the following:
(i) Available Chlorine
(ii) Causes of inertness of noble gases.
- Q. 9. What are chelates? Giving one example write the importance of chelate. (Or)
What is Zeise's Salt and Ferrocene? Explain with structure.
- Q. 10. Write the chemical reaction of chloroform with the following:
(i) Silver powder
(ii) Concentrate HNO_3
(iii) Acetone
(iv) Alkaline Solution of Phenol. (Or)
Why are Haloarenes less reactive than Haloalkane?
- Q. 11. What is Lucas reagent? Distinguish primary, secondary and tertiary alcohol using Lucas reagent. (Or)
Ethyl alcohol and Phenol both contain OH group. Why Phenol is acidic and alcohol is neutral in nature? Give reason.
- Q. 12. How will you obtain:
(i) Formic acid from Acetic acid.
(ii) Acetaldehyde from Acetylene. (Or)
Explain the preparation of Acetic acid by quick vinegar process with diagram.
- Q. 13. What is denaturation of protein and name the two diseases caused due to deficiency of protein. (Or)
What are enzymes? Give two examples with uses.
- Q. 14. Write notes on:
(i) Kanad (ii) Sushrut. (Or)
What is preservative? Give the name and formula of any two preservatives.

(Short Answer Type Questions)

- Q. 15. What is Raoult's law? How can molar mass of a non-volatile solute be determined with its help? (Or)

Calculate the osmotic pressure of 5% solution of glucose at 25°C (Molecular weight of Glucose = 180 and $R = 0.0821 \text{ liter atm K}^{-1} \text{ mol}^{-1}$)

Q. 16. Explain the dry cell with diagram. (Or)

Write short notes on:

(i) Nernst equation

(ii) Corrosion.

Q. 17. Explain the following:

(i) Cu^+ is colourless and Cu^{2+} is coloured

(ii) Zn shows only +2 oxidation state. (Or)

Compare Lanthanide and Actinide. (Write any five points).