Roll No. of Candidate : _____

CHEMISTRY **Intermediate Part-II , Class 12th (1stA 423- IV) Paper: II Group – II**

Time: 20 Minutes **OBJECTIVE ..... Code: 8488** Guj-12-2-23 **Marks: 17**

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

1.

1. Phosphorus helps the growth of
(A) root (B) leave (C) stem (D) seed

2. Which set of hybrid orbital has linear shape ?
(A) SP^3 (B) SP^2 (C) SP (D) dSP^2

3. The electrophile in omatic sulphonation is
(A) H_2SO_4 (B) $H\bar{S}O_4$ (C) SO_3 (D) SO_3^+

4. Which is neutral amino acid ?
(A) lysine (B) glycine (C) histidine (D) glutamic acid

5. Vinyl acetylene combines with HCl to form
(A) polyacetylene (B) benzene (C) chloroprene (D) divinyl acetylene

6. Which of the following sulphate is not soluble in water ?
(A) Sodium Sulphate (B) Potassium Sulphate (C) Zinc Sulphate (D) Barium Sulphate

7. The carbon atom of carbonyl group is
(A) SP – hybridized (B) SP^2 – hybridized (C) SP^3 – hybridized (D) dSP^2 – hybridized

8. Aluminium oxide is
(A) acidic (B) basic (C) amphoteric (D) neutral

9. Mark the correct statement
(A) NA^+ is smaller than Na atom (B) NA^+ is larger than Na atom
(C) Cl^- is smaller than Cl atom (D) Cl^- ion and Cl atom are equal in size

10. Which catalyst is used in contact process ?
(A) Fe_2O_3 (B) V_2O_5 (C) NO (D) SO_3

11. The strength of binding energy of transition elements depends upon
(A) number of electron pairs (B) number of unpaired electrons
(C) number of neutrons (D) number of protons

12. Which of these polymers is a synthetic polymer ?
(A) animal fat (B) starch (C) cellulose (D) polyester

13. Which compound is called a universal solvent ?
(A) H_2O (B) C_2H_5OH (C) $CH_3 - O - CH_3$ (D) CH_3OH

14. The anhydride of $HClO_4$ is
(A) ClO_3 (B) ClO_2 (C) Cl_2O_5 (D) Cl_2O_7

15. Ecosystem is a smaller unit of
(A) biosphere (B) lithosphere (C) hydrosphere D) atmosphere

16. Elimination bimolecular reaction is
(A) zero order reaction (B) first order reaction
(C) second order reaction (D) third order reaction

17. Methyl alcohol is not used
(A) as a solvent (B) as an antifreezing agent
(C) as a substitute for petrol (D) for denaturation of ethyl alcohol

CHEMISTRY **Intermediate Part-II , Class 12th (1stA 423) Paper: II Group – II**

Time: 2:40 Hours **SUBJECTIVE** Guj-12-2-23 **Marks: 68**

Note: Section I is compulsory. Attempt any THREE (3) questions from Section II.

SECTION – I

2. Write short answers to any EIGHT questions. **(2 x 8 = 16)**

i. Describe the preparation of borax from boric acid.

ii. What is chemical garden?

iii. Write down the chemistry of borax-bead test.

iv. Convert benzene into hexabromocyclohexane.

v. Describe Wurtz-Fitting reaction.

vi. Write down the mechanism of Friedel-Crafts acylation.

vii. What is saponification of fat? Write down its equation.

viii. How is PVC (polyvinyl chloride) formed? Write down its equation.

ix. Draw the structure of cellulose.

x. Define BOD. How is it measured?

xi. Mention any two health problems caused by ozone.

xii. How is oil spillage affecting the marine life?

3. Write short answers to any EIGHT questions. **(2 x 8 = 16)**

i. Define functional groups. Write down the name of any two nitrogen containing functional groups.

ii. What is vital force theory? Who rejected it?

iii. Differentiate between saturated and unsaturated hydrocarbons.

iv. Why sigma bond is inert?

v. How can ethyne be produced from calcium carbide?

vi. How does aqua regia dissolve gold?

vii. Why is nitrogen trivalent but phosphorus has variable oxidation state?

viii. How is PCl_3 produced from $SOCl_2$?

ix. Which is the best method for preparation of alkyl halides from alcohols?

x. What is meant by β-elimination reaction?

xi. Define the term fertilizers.

xii. Write down any two woody and two non-woody raw materials for paper manufacturing.

4. Write short answers to any SIX questions. **(2 x 6 = 12)**

i. Give the reaction of chromyl chloride test.

ii. Define chelates. Give one example.

iii. Give four properties of transition elements.

iv. How methanol is prepared in laboratory? Give reaction.

v. Convert phenol into cyclohexanol.

(Turn Over)

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vi. Give reaction of $C_2H_5OC_2H_5$ with HI.

vii. What is formalin? How is it formed?

viii. Give any four uses of formaldehyde.

ix. Convert acetic acid into ethane.

SECTION - II

Note: Attempt any THREE (3) questions.

5. (a) How does classification of elements in different blocks help in understanding their chemistry. (4)

   (b) Describe the commercial preparation of sodium hydroxide by the diaphragm cell. (4)

6. (a) How is bleaching powder prepared by Beckmann's method? 1x4 (4)

   (b) Describe different zones of the rotary kiln of manufacture of cement. 1x4 (4)

7. (a) What is octane number? How can it be improved? (4)

   (b) Describe atomic orbital treatment of benzene. (4)

8. (a) Write down a note on halogenation of alkane. 2+2 (4)

   (b) Explain the following terms by giving suitable examples 1+3 (4)
   (i) Nucleophile (ii) Electrophile
   (iii) Leaving group (iv) Substrate

9. (a) Explain the mechanism of addition of sodium bisulphite to acetone. (4)

   (b) Write down the mechanism for reaction of acetic acid and ethanol. (4)