Roll No. of Candidate : _____

CHEMISTRY **(Intermediate Part-II , Class 12th) 422 - (I)** **Paper II (Group – II)**

Time: 20 Minutes **OBJECTIVE ..... Code: 8482** GUJA22 **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. Attempt as many questions as given in objective type question paper and leave others blank.

1.

1. Keeping in view the size of atoms which order is the correct one _____ .
   (A) Mg > Sr (B) Ba > Mg (C) Lu > Ce (D) Cl > I
2. The oxides of beryllium are _____ .
   (A) acidic (B) basic (C) amphoteric (D) none of these
3. Which element is used in the thermite process because of its reactivity?
   (A) iron (B) copper (C) aluminium (D) zinc
4. Laughing gas is chemically _____ .
   (A) NO (B) N_2O (C) NO_2 (D) N_2O_4
5. Hydrogen bond is the strongest between the molecules of _____ .
   (A) HF (B) HCl (C) HBr (D) HI
6. The total number of transition elements is _____ .
   (A) 10 (B) 14 (C) 40 (D) 58
7. The state of hybridization of carbon atom in methane is _____ .
   (A) SP^3 (B) SP^2 (C) SP (D) dSP^2
8. Formula of chloroform is _____ .
   (A) CH_3Cl (B) CCl_4 (C) CH_2Cl_2 (D) $CHCl_3$
9. During nitration of benzene, the active nitrating agent is _____ .
   (A) NO_3 (B) NO_2^+ (C) NO_2^- (D) HNO_3
10. For which mechanism the first step involved is same?
    (A) E_1 and E_2 (B) E_2 and S_N2 (C) S_N1 and E_2 (D) E_1 and S_N1
11. Which compound shows hydrogen bonding?
    (A) C_2H_6 (B) C_2H_5Cl (C) CH_3OCH_3 (D) C_2H_5OH
12. Which of the following will have the highest boiling point?
    (A) mathanal (B) ethanal (C) propanal (D) 2-hexanone
13. Acetic acid is manufactured by _____ .
    (A) distillation (B) fermentation (C) ozonolysis (D) esterification
14. Which of these polymers is an addition polymer?
    (A) nylon – 6 , 6 (B) polystyrene (C) terylene (D) epoxy resin
15. Phosphorus helps the growth of _____ .
    (A) root (B) leave (C) stem (D) seed
16. The pH range of the acid rain is _____ .
    (A) 7 – 6.5 (B) 6.5 – 6 (C) 6 – 5.6 (D) less than 5
17. Which one heavy metal is highly toxic and does not has safe limit?
    (A) Hg (B) Ca (C) Mg (D) Al

CHEMISTRY **(Intermediate Part-II , Class 12th) 422** **Paper II** **(Group – II)**

Time: 2:40 Hours **SUBJECTIVE** GUJ-92-22 **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. Why the second value of electron affinity of an element is usually shown with a positive sign?

ii. Lanthanide contraction controls the atomic sizes of elements of 6th and 7th periods. Give reason briefly.

iii. KO_2 is used in breathing equipments for mountaineers and in space crafts, why?

iv. Aqueous solution of Na_2CO_3 is alkaline in nature. How it can be justified?

v. What is the structure of CO_2 and SiO_2 and why they differ from each other?

vi. How boric acid is prepared on commercial scale from colemanite?

vii. How moderately dilute and conc. HNO_3 reacts with zinc?

viii. Why is SO_3 dissolved in H_2SO_4 and not in water?

ix. What is chromyl chloride test?

x. What is sacrificial corrosion?

xi. How digestion process is carried out in paper industry?

xii. What reactions take place in the setting of cement from 01 to 07 days?

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

i. What is Teflon? Write down its formula and uses.

ii. Bleaching powder acts as an oxidizing agent. Explain.

iii. Define metamerism. Give an example.

iv. What are heterocyclic compounds? Give two examples.

v. How methane and ethane can be prepared from sodium acetate?

vi. Write down any two uses of ethyne.

vii. State and explain Markownikov's rule with an example.

viii. What is Grignard's reagent? How it can be prepared?

ix. Define nucleophile by giving its two examples.

x. How is polystyrene prepared? Give its two uses.

xi. What is meant by denaturation of proteins?

xii. Write down names of nitrogenous bases present in DNA.

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

i. How can you prepare m-chloronitrobenzene from benzene?

ii. Draw the structure of anthracene and phenanthrene.

iii. What is Dow's method?

iv. What do you mean by denaturing of alcohol?

(Turn Over)

v. Write down four uses of formaldehyde. GUJ-G2-22

vi. What are essential and non-essential amino acids?

vii. Why the boiling points of carboxylic acids are relatively high?

viii. How is oil spillage affecting the marine life?

ix. What is biological oxygen demand (BOD)?

(SECTION - II)

Note: Attempt any THREE (3) questions from Section II

5. (a) Explain periodic trends in the following physical properties: **(4)**

i) Ionization energy ii) Metallic character

(b) Discuss the importance of oxides of lead in paints. **(4)**

6. (a) Write down names and formulas of four minerals of sodium. **1x4 (4)**

(b) Give systematic names to following complexes. **1x4 (4)**

i) $Na_3[CoF_6]$ ii) $K_2[PtCl_6]$

iii) $[Cr(OH)_3(H_2O)_3]$ iv) $[Co(NH_3)_6]Cl_3$

7. (a) Define hybridization. Explain SP hybridization with the formation of ethyne. **(4)**

(b) Compare S_N1 reactions with S_N2 reactions by four points. **(4)**

8. (a) Give the mechanism of the following reactions: **2+2 (4)**

i) Ethene with Br_2 ii) Ethene with ozone

(b) What are condensation reactions? Explain the mechanism of Aldol condensation. **1+3 (4)**

9. (a) Write down four methods of preparation of benzene. **(4)**

(b) Write down reactions of phenol in which benzene ring is used. **(4)**