

Time: 20 Minutes

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.

- PVC is a polymer
(A) thermosetting (B) thermoplastic (C) autosetting (D) wet setting
- A double bond consists of
(A) two sigma bonds (B) two pi bonds
(C) one sigma and one pi bond (D) one sigma and two pi bonds
- The electrophile in aromatic sulphonation is
(A) H_2SO_4 (B) HSO_4^- (C) SO_3 (D) SO_3^+
- Histidine is an amino acid
(A) acidic (B) basic (C) amphoteric (D) neutral
- Formula of chloroform is
(A) CH_3Cl (B) CCl_4 (C) CHCl_3 (D) CH_2Cl_2
- Chile Saltpeter has the chemical formula
(A) KNO_2 (B) NaNO_3 (C) $\text{Na}_2\text{B}_4\text{O}_7$ (D) $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$
- Carbolic acid is the other name of
(A) phenol (B) toluene (C) nitrobenzene (D) aniline
- The element belongs to group IV-A of the periodic table
(A) Barium (B) Iodine (C) Lead (D) Oxygen
- Keeping in view atomic and ionic radii, mark the correct statement
(A) $\text{Na}^+ < \text{Na}$ (B) $\text{Cl}^- < \text{Cl}$ (C) $\text{Cl}^- = \text{Cl}$ (D) $\text{Na}^+ > \text{Na}$
- Ozone layer is present in
(A) troposphere (B) thermosphere (C) stratosphere (D) mesosphere
- Which of the following is a typical transition metal?
(A) Sc (B) Y (C) Ra (D) Co
- The %age of nitrogen in NH_3 is
(A) 82 (B) 81 (C) 80 (D) 88
- The ethanol can be converted into ethanoic acid by
(A) Hydrogenation (B) Hydration (C) Oxidation (D) Fermentation
- The anhydride of HClO_4 is
(A) ClO_3 (B) ClO_2 (C) Cl_2O_5 (D) Cl_2O_7
- Laughing gas is chemically
(A) NO (B) N_2O (C) N_2O_4 (D) NO_2
- Which one of the following is not a nucleophile?
(A) H_2O (B) BF_3 (C) NH_3 (D) H_2S
- 40% aqueous solution of formaldehyde is called as
(A) formalin (B) Tollen's Reagent (C) paraldehyde (D) wood spirit

316-(II)-1stA 423-26000

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

SECTION - I

2. Write short answers to any EIGHT questions.

(2 × 8 = 16)

- Why CO₂ is gas at room temperature while SiO₂ solid?
- Give any four uses of boric acid.
- Give reaction of H₃BO₃ with C₂H₅OH.
- Convert benzene into toluene.
- Give x-ray structure of benzene.
- What are polyester resins? Give uses.
- Convert sodium benzoate into benzene.
- How protein is denatured? Give one example.
- Give hydrolysis reaction of triglycerides.
- How is oil spillage affecting the marine life?
- What is ozone hole? Give comments.
- What are primary and secondary amines? Give examples.

Bise GRW**f Taleem City**

Grace Academy SKT

3. Write short answers to any EIGHT questions.

(2 × 8 = 16)

- Write down the structural formulae of two possible isomers of C₄H₁₀.
- What are heterocyclic compounds? Give one example.
- Identify each lettered product of the reaction. Ethylalcohol $\xrightarrow{\text{conc. H}_2\text{SO}_4}$ A $\xrightarrow{\text{Br}_2}$ B
- Why alkenes are more reactive than alkanes?
- What is Raney nickel? How is it prepared?
- What is the effect of heat on solid N₂O₄?
- Why the elements of group VI-A other than Oxygen show more than two oxidation states?
- Complete and balance the following equations

$$P + NO \longrightarrow ?$$

$$HNO_2 + CO(NH_2)_2 \longrightarrow ?$$
- How will you carry out the following conversion?

$$CH_3 - CH_3 \longrightarrow (CH_3 - CH_2)_4 N^+ Br^-$$
- Differentiate between nucleophile and electrophile.
- What are common bleaching agents used in paper industry?
- What are fertilizers?

(2 × 6 = 12)

4. Write short answers to any SIX questions.

- What is co-ordination number? Give its example.
- Fe³⁺ shows maximum paramagnetic behavior. Justify it.
- Ethanol has higher boiling point than diethyl ether. Give reason.
- How is ethanol prepared from molasses?
- Write down mechanism of reaction between C₂H₅OC₂H₅ and HI.

(Turn Over)

- vi. Write down names and formulas of two ores of iron.
- vii. Write down two tests to differentiate between carbonyl and non-carbonyl compounds.
- viii. Show the dry distillation of a mixture of calcium salts of formic acid and acetic acid.
- ix. Draw structures of phthalic acid and malonic acid.

SECTION - II

Bise GRW

f Taleem City

Note: Attempt any THREE (3) questions.

- 5. (a) Define oxidation state. Write down its variation trend in modern periodic table.
(b) Describe the peculiar behaviour of beryllium.
- 6. (a) What happens when bleaching powder reacts with
(i) dil. H_2SO_4 (ii) Conc. H_2SO_4
(iii) NH_3 (iv) HCl
(b) Write essential qualities of a good fertilizer.
- 7. (a) Define cracking of petroleum. Also discuss catalytic and steam cracking.
(b) Write down a note on stability of benzene.
- 8. (a) How does ethyne react with
(i) Halogen acid (ii) Alkaline $KMnO_4$
(iii) Ammonical cuprous Chloride (iv) 10% H_2SO_4 in the presence of $HgSO_4$
(b) Define nucleophilic substitution reactions? Explain SN_1 mechanism in detail.
- 9. (a) Write down a note on aldol condensation in detail.
(b) Write down a note on peptides and proteins in detail.

316-1stA 423-26000