

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 bubble in front of that question number. Use marker or pen to fill the bubbles. Cutting or filling two or more bubbles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank. No credit will be awarded in case BUBBLES are not filled. Do not solve questions on this sheet of OBJECTIVE PAPER.

Q.No.1

- (1) Ether shows the phenomenon of:-
(A) Position isomerism (B) Functional group isomerism (C) Metamerism (D) Cis-trans isomerism
- (2) Vinyl acetylene combines with HCl to form:-
(A) Polyacetylene (B) Benzene (C) Chloroprene (D) Divinyl acetylene
- (3) _____ can be used as a catalyst in Friedel-Craft's reactions.
(A) $AlCl_3$ (B) HNO_3 (C) $BeCl_2$ (D) $NaCl$
- (4) _____ is not a nucleophile.
(A) H_2O (B) H_2S (C) BF_3 (D) NH_3
- (5) According to Lewis concept; ether behaves as:-
(A) Acid (B) Base (C) Acid as well as a base (D) Electrophile
- (6) The Carbon atom of a Carbonyl group is:-
(A) sp hybridized (B) sp^2 hybridized (C) sp^3 hybridized (D) dsp^2 hybridized
- (7) Acetic acid can be manufactured by:-
(A) Distillation (B) Fermentation (C) Ozonolysis (D) Esterification
- (8) The main pollutant of leather tanneries in the waste water is due to the salt of:-
(A) Lead (B) Chromium (VI) (C) Copper (D) Chromium (III)
- (9) The reaction between a fat and $NaOH$ is:-
(A) Esterification (B) Hydrogenolysis (C) Fermentation (D) Saponification
- (10) Phosphorus helps in the growth of:-
(A) Root (B) Leave (C) Stem (D) Seed
- (11) _____ is secondary pollutant.
(A) Carbonic acid (B) CO_2 (C) SO_2 (D) CO
- (12) Keeping in view the size of atoms, the correct order is:-
(A) $Mg > Sr$ (B) $Ba > Mg$ (C) $Lu > Ce$ (D) $Cl > I$
- (13) The mineral $CaSO_4 \cdot 2H_2O$ has general name of:-
(A) Gypsum (B) Dolomite (C) Calcite (D) Epsom Salt
- (14) _____ elements is not present abundantly in earth's crust.
(A) Silicon (B) Aluminium (C) Sodium (D) Oxygen
- (15) Oxidation of NO in air produces:-
(A) N_2O (B) N_2O_3 (C) N_2O_4 (D) N_2O_5
- (16) The anhydride of $HClO_4$ is:-
(A) ClO (B) ClO_2 (C) ClO_3 (D) Cl_2O_7
- (17) Co-ordination number of Pt in $[PtCl(NO_2)(NH_3)_4]^{2-}$ is:-
(A) 2 (B) 4 (C) 1 (D) 6

NOTE: - Write same question number and its part number on answer book, as given in the question paper.

SECTION-I

2. Attempt any eight parts. 8 × 2 = 16
- Define Atomic Radius. Why Atomic Radius of Alkali metals increases in group of Periodic table?
 - What are Halides? Give their types.
 - What is function of Ca in plant growth?
 - What is the formula of Red Lead? Give its principle uses.
 - What is the effect of heat on the Orthoboric Acid?
 - What is the Chemistry of the Borax-bead Test?
 - Orthophosphoric acid is a weak tribasic acid. Prove it giving reactions with NaOH.
 - Complete the following chemical equations:-
 - $H_2S + NO_2 \longrightarrow$
 - $KI + NO_2 \longrightarrow$
 - Concentrated H_2SO_4 act as a dehydrating agent. Give two examples.
 - What is meant by Biochemical Oxygen Demand?
 - Define Smog. Give the composition of Photochemical Smog.
 - What is an Oil Refinery? Mention oil refineries in Pakistan.
3. Attempt any eight parts. 8 × 2 = 16
- Name the following complexes according to IUPAC System:-
 - $[Cr(OH)_3(H_2O)_3]$
 - $K_2[Pt(Cl)_6]$
 - Define the term coordination number with an example.
 - How Ethylene is converted into? (a) Ethylene Oxide (b) Ethylene glycol
 - How will you convert 1 - propanol into 1 - chloro - 2 - propanol?
 - Write down the structural formulae of following compounds:-
 - Benzophenone
 - Acetophenone
 - Which method is more useful for the preparation of ethyl chloride? Give its chemical reaction.
 - Write down the structural formulae of following compounds:-
 - Glycerol
 - Lactic acid
 - Ethyl alcohol is a liquid while methylchloride is a gas? Justify.
 - How will you distinguish between Acetaldehyde and Benzaldehyde?
 - Discuss the reaction of an aldehyde with Tollen's reagent.
 - What are Zwitter Ions?
 - What is a Peptide Bond? Write down formula of a dipeptide?
4. Attempt any six parts. 6 × 2 = 12
- What are Thermosetting Polymers? Give an example.
 - Define Saponification number with an example.
 - Write four importances of Lipids.
 - What are Micronutrients?
 - Describe the composition of a good Portland cement.
 - How is the wet sheet of paper dried in paper industry?
 - Why is HF a weaker acid than HCl?
 - Write the reactions of bleaching powder with (a) NH_3 (b) CO_2
 - Give two uses of Argon.

SECTION-II

- NOTE: - Attempt any three questions. 8 × 3 = 24
- Explain the position of Hydrogen in 1 A and VII A groups and explain its similarities and dissimilarities with those groups. 4
 - What is the role of Gypsum in Agriculture and Industry? 4
 - Explain the following properties of Transition metals:- 4
 - Paramagnetism
 - Colour
 - Explain the process of incineration of industrial waste. 4
 - Define Alicyclic compounds and Aromatic compounds with one example in each case. 4
 - Predict the major products of bromination of the following compounds:- 4
 - Toluene
 - Benzoic acid
 - Benzaldehyde
 - Phenol
 - How will you bring about the following conversions? 4
 - Methane to Ethane
 - Acetic acid to Ethane
 - How is Methyl alcohol obtained on large scale from water gas? Draw diagram also. 4
 - Write reactions of ethyl magnesium bromide with:- 4
 - Water
 - Ammonia
 - Alcohol
 - CO_2
 - Explain Cannizzaro's reaction with suitable examples and mechanism. 4