

Roll No. _____

(To be filled in by the candidate)

(Academic Sessions 2019 – 2021 to 2021 – 2023)

CHEMISTRY223-1st Annual-(INTER PART – II)

Time Allowed : 20 Minutes

Q.PAPER – II (Objective Type)

GROUP – I

Maximum Marks : 17

PAPER CODE = 8485

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	Which one of the following is not nucleophile : (A) H_2O (B) H_2S (C) BF_3 (D) NH_3
2	The state of hybridization of carbon atom in methane is : (A) sp^3 (B) sp^2 (C) sp (D) dsp^2
3	Which test is applied to detect amino acids : (A) Fehling's test (B) Iodoform test (C) Ninhydrin test (D) Sodium nitroprusside test
4	Which of the following sulphate is not soluble in water : (A) Sodium sulphate (B) Potassium sulphate (C) Zinc sulphate (D) Barium sulphate
5	Phenol-formaldehyde resin is called : (A) Bakelite (B) Teflon (C) Orlon (D) Terylene
6	Vinyl acetylene combines with HCl to form : (A) Polyacetylene (B) Benzene (C) Chloroprene (D) Divinyl acetylene
7	Laughing gas is chemically : (A) NO (B) N_2O (C) NO_2 (D) N_2O_4
8	The oxides of metals are : (A) Acidic (B) Basic (C) Amphoteric (D) Neutral
9	According to Lewis concept ethers behave as : (A) Acid (B) Base (C) Acid as well as base (D) None of these
10	Which is not a calcareous material : (A) Lime (B) Clay (C) Marble (D) Marine shell
11	Benzene can not undergo : (A) Substitution reaction (B) Addition reaction (C) Oxidation reaction (D) Elimination reaction
12	The anhydride of $HClO_4$ is : (A) ClO_3 (B) ClO_2 (C) Cl_2O_5 (D) Cl_2O_7
13	The residence time of NO in atmosphere is : (A) One day (B) Two days (C) Three days (D) Four days
14	A double bond consists of : (A) Two sigma bonds (B) One sigma and one pi bond (C) One sigma and two pi bonds (D) Two pi bonds
15	Tincal is a mineral of : (A) Al (B) B (C) Si (D) C
16	The carbon atom of a carboxyl group is : (A) sp - hybridized (B) sp^2 - hybridized (C) sp^3 - hybridized (D) None of these
17	Which of these polymers is an addition polymer : (A) Nylon – 6,6 (B) Polystyrene (C) Terylene (D) Epoxy resin

191-223-I-(Objective Type)- 10500 (8485)

2. Write short answers to any EIGHT (8) questions :

- (i) Write down the chemistry of borax bead test.
- (ii) Draw the electronic structure of CO and CO₂.
- (iii) How will you convert boric acid into borax?
- (iv) Convert benzene into glyoxal.
- (v) Mention the product when phenol is distilled with Zn dust by giving reaction.
- (vi) Give two uses of silicones.
- (vii) Define saponification number.
- (viii) How polyvinyl acetate is formed? Write its equation.
- (ix) Draw the structure of cholesterol.
- (x) Write down the equation, when suspended impurities are removed in the colloidal form in raw water.
- (xi) Define acid rain.
- (xii) Mention the hazards of chloroform.

3. Write short answers to any EIGHT (8) questions :

- (i) Give the two reactions for the preparation of N₂O.
- (ii) Write down four uses of HNO₃.
- (iii) Give the reactions of H₂SO₄ with : (a) NaCl (b) KNO₃
- (iv) Convert CH₄ into formaldehyde by catalytic oxidation.
- (v) Define Markownikov's rule. Give an example.
- (vi) Prepare ozonide from ethene.
- (vii) Name two main factors which govern reactivity of R-X bond in alkyl halides.
- (viii) Define nucleophile. Give two examples.
- (ix) What is vital force theory?
- (x) What are heterocyclic organic compounds? Give two examples.
- (xi) Write down four essential qualities of a good fertilizer.
- (xii) Write down two chemical reactions involved in the preparation of urea.

4. Write short answers to any SIX (6) questions :

- (i) Complete and balance the following chemical equation :

$$KMnO_4 + FeSO_4 + H_2SO_4 \rightarrow$$
- (ii) Give systematic names of the following :
 (a) K₂[Cu(CN)₄] (b) K₂[PtCl₄]
- (iii) What is meant by "central metal ion"? Explain with one example.
- (iv) How are ethene and diethyl ether produced from ethyl alcohol?
- (v) Explain Lucas test.

(Turn Over)

(2)

4. (vi) Give reactions of phenol with : (a) Bromine water. (b) Conc. H_2SO_4
(vii) What is Benedict's solution test? Give reaction.
(viii) How does hydrazine react with acetone?
(ix) Write reaction between acetic acid and ammonia for the formation of amide.

SECTION - II

Note : Attempt any THREE questions.

5. (a) Define hydration energy. Give its trend in the periodic table. 4
(b) Explain peculiar behaviour of Beryllium. 4
6. (a) What happens when bleaching powder reacts with the following reagents : 1,1,1,1
(i) dil. H_2SO_4 (ii) Excess of conc. H_2SO_4 (iii) NH_3 (iv) CO_2
(b) How is urea manufactured in Pakistan? Describe in detail. 4
7. (a) What is orbital hybridization? Explain the geometry of ethyne by sp hybridization. 4
(b) Explain Friedel-Crafts acylation of benzene along with its mechanism. 4
8. (a) How can ethyne be converted into : (i) Oxalic acid. (ii) Acetaldehyde. 2,2
(b) Discuss S_N1 mechanism for nucleophilic substitution reaction of alkyl halide. 4
9. (a) Discuss the oxidation of ketones and aldehydes in detail. 4
(b) How can you prepare the following from ethanoic acid : 1,1,1,1
(i) Ethyl alcohol. (ii) Ethane. (iii) Sodium acetate. (iv) Acetic anhydride.

191-223-I-(Essay Type)-42000