

(To be filled in by the candidate)

(Academic Sessions 2020 – 2022 to 2022 – 2024)

CHEMISTRY

224-1st Annual-(INTER PART – II)

Time Allowed : 20 Minutes

Q.PAPER – II (Objective Type)

GROUP – II

Maximum Marks : 17

PAPER CODE = 8484

LHE-2-24

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	Ethers show the phenomenon of : (A) Position isomerism (B) Functional group isomerism (C) Meta merism (D) Cis trans isomerism
2	Molecular formula of white phosphorus is : (A) P_4 (B) P_8 (C) P_3 (D) P_2
3	Which of the following reagents will react with both aldehydes and ketones : (A) Grignard reagent (B) Tollen's reagent (C) Fehling reagent (D) Benedicts reagent
4	Which three elements are needed for the healthy growth of plants : (A) N, S, P (B) N, Ca, P (C) N, P, K (D) N, K, C
5	The mineral ($CaSO_4 \cdot 2H_2O$) has a general name : (A) Gypsum (B) Dolomite (C) Calcite (D) Epsom salt
6	A single chloride free radical can destroy how many ozone molecules : (A) 100 (B) 100000 (C) 10000 (D) 10
7	Hydrogen bond is strongest between the molecules of : (A) HF (B) HCl (C) HBr (D) HI
8	Which compound is responsible for ozone depletion : (A) $CHCl_3$ (B) CH_2Cl_2 (C) CFC (D) CCl_4
9	Which one of the nitrogen base is not present in RNA : (A) Cytocine (B) Adenine (C) Thiamine (D) Uracil
10	Benzene cannot undergo : (A) Substitution reaction (B) Addition reaction (C) Oxidation reaction (D) Elimination reaction
11	The chief ore of aluminum is : (A) Na_2AlF_6 (B) $Al_2O_3 \cdot 2H_2O$ (C) Al_2O_3 (D) $Al_2O_3 \cdot H_2O$
12	Which of the following has maximum hydration energy : (A) Li^+ (B) Na^+ (C) K^+ (D) Mg^{+2}
13	Ether linkage is : (A) $\begin{array}{c} & & \\ -C-N-C- \\ & & \end{array}$ (B) $\begin{array}{c} & & \\ -C-O-C- \\ & & \end{array}$ (C) $\begin{array}{c} & & \\ -C-S-C- \\ & & \end{array}$ (D) $\begin{array}{c} & & \\ -C=N-C- \\ & & \end{array}$
14	The order of a typical S_N2 reaction is : (A) Zero (B) First (C) Second (D) Third
15	Coordination number of Pt in $[PtCl(NO_2)(NH_3)_4]$ is : (A) 2- (B) 4 (C) 1 (D) 6
16	Which compound is called a universal solvent : (A) H_2O (B) CH_3OH (C) C_2H_5OH (D) CH_3-O-CH_3
17	The solution of which acid is used for seasoning of food : (A) Formic acid (B) Acetic acid (C) Benzoic acid (D) Butanoic acid

Roll No _____ (To be filled in by the candidate)

(Academic Sessions 2020 – 2022 to 2022 – 2024)

CHEMISTRY

224-1st Annual-(INTER PART – II)

Time Allowed : 2.40 hours

PAPER – II (Essay Type)

GROUP – II

Maximum Marks : 68

SECTION – I

LHR-2-24

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

16

- (i) Why size of cation is smaller than its parent atom? Give example also.
- (ii) Why diamond is a non-conductor while graphite is conductor?
- (iii) What is lime mortar?
- (iv) Write down the chemical formula of Sylvite and Natron.
- (v) Find the value of 'x' in the complex of Fe (II), $[Fe(CN)_6]^{x-}$.
- (vi) Under what conditions does Al corrode?
- (vii) Why R-I is more reactive than R-F?
- (viii) Define leaving group with two examples.
- (ix) Differentiate between homopolymer and terpolymer. Give examples.
- (x) Write down the structures of epichlorohydrin and diphenylol propane.
- (xi) Write down any two characteristics of lipids.
- (xii) Write any four essential qualities of a good fertilizer.

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

16

- (i) Why does aqua regia dissolve platinum?
- (ii) How does NO_2 act as an oxidizing agent?
- (iii) Why HF is weaker acid than HBr?
- (iv) Which halogen is used as an antiseptic?
- (v) What is antiknocking agent and give its disadvantage?
- (vi) What is tautomerism? Give example.
- (vii) How to prepare formaldehyde from ethene?
- (viii) How does propyne react with : (a) 10% H_2SO_4 in the presence of $HgSO_4$
(b) Alkaline $KMnO_4$
- (ix) How to prepared alkane from carbonyl compounds?
- (x) How does acid rain affect our environment?
- (xi) How is ozone layer depleted by CFC_3 ?
- (xii) What are the harmful effects of chlorination of H_2O ?

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

12

- (i) Give four uses of aluminium.
- (ii) What is meant by the term "inert pair"? Give brief description.
- (iii) What is water glass? How is it prepared from sodium carbonate?
- (iv) What happens when benzene is heated with conc. H_2SO_4 at $250^\circ C$?
- (v) Why is the boiling point of ethanol higher than that of diethyl ether?

(Turn Over)

(2)

4. (vi) Write structural formulas of acetophenone and picric acid.
(vii) How is acetaldehyde prepared from ethylene and acetone from calcium acetate?
(viii) How is acetic acid prepared from ethanol?
(ix) What is the difference between acidic and basic amino acids? Give examples.

SECTION – II

Note : Attempt any **THREE** questions.

5. (a) Mention four improvements made in Mendeleev's periodic table by Moseley. 4
(b) Describe the commercial preparation of sodium by Down's cell. 4
6. (a) Describe relative reactivities of the halogens as oxidizing agents. 4
(b) Describe phosphatic fertilizers and potassium fertilizers. 4
7. (a) Explain geometric isomerism with suitable examples and also give necessary condition for compound to show geometric isomerism. 4
(b) Give four equations with condition for the preparation of alkyl halides from alcohols. 4
8. (a) Discuss catalytic oxidation of methane. 4
(b) Describe the reaction of ethanal and acetone with following : 2,2
(i) Hydroxyl amine. (ii) Phenyl hydrazine
9. (a) Write down any two reactions in which benzene behaves as if it is a saturated hydrocarbon and two reactions in which it behaves as if it is unsaturated. 2,2
(b) How will you prepare (i) Bakelite (ii) Phenyl acetate from phenol. 2,2

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