

Roll No. \_\_\_\_\_ (To be filled in by the candidate)

(Academic Sessions 2020 – 2022 to 2022 – 2024)

**CHEMISTRY**

224-1<sup>st</sup> Annual-(INTER PART – II)

Time Allowed : 20 Minutes

Q.PAPER – II ( Objective Type )

GROUP – I

Maximum Marks : 17

PAPER CODE = 8487 LHR-1-24

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	Which of these polymers is an addition polymer : (A) Nylon-6,6 (B) Polystyrene (C) Terylene (D) Epoxy resin
2	Preparation of vegetable ghee involves : (A) Halogenation (B) Dehydrogenation (C) Hydroxylation (D) Hydrogenation
3	One of the following hydrogen halide is the weakest acid in solution : (A) HI (B) HBr (C) HCl (D) HF
4	Which compound shows hydrogen bonding : (A) $C_2H_6$ (B) $C_2H_5Cl$ (C) $CH_3-CH_2-CH_3$ (D) $C_2H_5OH$
5	One of the following acid can be used as a catalyst in Friedel-Crafts reactions : (A) $AlCl_3$ (B) $HNO_3$ (C) $BeCl_2$ (D) $H_2SO_4$
6	Down's cell is used to prepare : (A) Sodium carbonate (B) Sodium bicarbonate (C) Sodium metal (D) Sodium hydroxide
7	Newspaper can be recycled again and again by how many times : (A) 2 (B) 3 (C) 4 (D) 5
8	Co-ordination number of Pt in $[PtCl(NO_2)(NH_3)_4]$ is : (A) 6 (B) 4 (C) 1 (D) 2-
9	Acetic acid is manufactured by : (A) Distillation (B) Ozonolysis (C) Fermentation (D) Esterification
10	Select the two normal elements which are present in fourth period : (A) K, Ca (B) Rb, Sr (C) Cs, Ba (D) Fr, Ra
11	When ethylene epoxide ( $CH_2-CH_2$ ) is made to react with ethyl magnesium bromide followed by acid hydrolysis the product formed is : (A) 1-propanol (B) 2-propanol (C) 1-butanol (D) 2-butanol
12	One of the following metal used in the thermite process because of its reactivity : (A) Iron (B) Copper (C) Aluminium (D) Zinc
13	Which woody raw material is used for the manufacture of paper pulp : (A) Cotton (B) Bagasse (C) Poplar (D) Rice straw
14	Cannizzaro's reaction is not given by : (A) Formaldehyde (B) Acetaldehyde (C) Benzaldehyde (D) Trimethylacetaldehyde
15	The formation of chloramines prevented in ---- pH : (A) Acidic (B) Alkaline (C) Neutral (D) Low
16	Select from the following one which is alcohol : (A) $CH_3-O-CH_3$ (B) $CH_3-CH_2-OH$ (C) $CH_3COOH$ (D) $CH_3-CH_2-Br$
17	Choose the gas which is obtained by the reaction of phosphorus with thionyl chloride : (A) $SO_2$ (B) $PH_3$ (C) $CO_2$ (D) $C_2H_2$

**SECTION – I**

LHR-1-24

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

16

- (i) Why the second value of electron affinity of an element is usually shown with a positive sign? Give example.
- (ii) Prove that ZnO is an amphoteric oxide.
- (iii) Write down the chemical formula of dolomite and asbestos.
- (iv) What is milk of magnesia and where it is used?
- (v) What is anode coating?
- (vi) Why does the compounds of transition elements are coloured?
- (vii) Define nucleophile with two examples.
- (viii) Which is the best method for the preparation of alkyl halide? Give reaction.
- (ix) Define saponification number with an example.
- (x) Write down the structures of acrylic acid and acrylonitrile.
- (xi) Differentiate between copolymer and terpolymer. Give examples.
- (xii) Why nitrogenous fertilizers are supplied to plants?

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

16

- (i) What is the effect of temperature on  $N_2O_4$ ?
- (ii) How does  $HNO_3$  react with Cu metal?
- (iii) Why iodine has metallic luster?
- (iv) Which halogen is used as an antiseptic?
- (v) Explain the type of bonds and shape of HCHO molecule using hybridization approach.
- (vi) Write the structural formulas of the possible isomers of  $C_4H_{10}$ .
- (vii) How 2-Butene will react with following reagents :  
(a)  $O_2$  in the presence of Ag (b)  $Br_2$  in  $CCl_4$
- (viii) What is Raney Nickel and give its use?
- (ix) How to test the unsaturation of alkenes? Give reaction.
- (x) What are secondary pollutants?
- (xi) What is meant by term BOD and COD?
- (xii) How does ozone help to protect us?

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

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- (i) What are different types of boric acid? Give their names.
- (ii) What are products formed when aluminium reacts with  $HCl$  and  $H_2SO_4$ ?
- (iii) Give four common properties of group IVA elements.
- (iv) How is ethyl benzene prepared through Wurtz fitting reaction?
- (v) How are ethyl chloride and ethyl amine prepared from ethanol?

(Turn Over)

(2)

4. (vi) How will you convert ethanol into ethanal?  
(vii) Give four uses of acetaldehyde.  
(viii) What is Ninhydrin test? Which compounds are detected through this test?  
(ix) How would you carry out the following conversions :  
(a) Acetic acid into acetamide. (b) Acetic acid into acetone.

## SECTION – II

**Note :** Attempt any THREE questions.

5. (a) Discuss variation of melting and boiling points of elements across the short periods of periodic table. 4  
(b) Give any four points to elaborate the peculiar behaviour of beryllium. 4  
6. (a) How does fluorine differ from its own family members? 4  
(b) What is setting of cement? Discuss the reactions taking place in first 24 hours in setting of cement. 4  
7. (a) Define hybridization and describe sp-hybridization of ethyne. 4  
(b) Write a note on Beta-Elimination Reactions of alkyl halides. 4  
8. (a) How does ethyne reacts with : 4  
(i) Halogen acid  
(ii) Strong alkaline  $\text{KMnO}_4$  solution  
(iii) Water in the presence of  $\text{HgSO}_4 / \text{H}_2\text{SO}_4$   
(iv) Ammonia in the presence of  $\text{Al}_2\text{O}_3$   
(b) Explain haloform reaction by giving four reaction of halogen with : 4  
(i)  $\text{CH}_3\text{CHO}$  (ii)  $\text{CH}_3\text{COCH}_3$  (iii)  $\text{CH}_3 - \overset{\text{OH}}{\underset{|}{\text{CH}}} - \text{CH}_3$  (iv)  $\text{CH}_3\text{CH}_2\text{OH}$   
9. (a) Give two reactions in which benzene behave as saturated compounds and two in which benzene behave as unsaturated compound. 2,2  
(b) How will you prepare bakelite and picric acid from phenols. 3,1

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