

1224 Warning:- Please write your Roll No. in the space provided and sign. Roll No-----  
(Inter Part - II) (Session 2020-22 to 2022-24) Sig. of Student -----

Chemistry (Objective) *SGD-1-24* Group - I Paper (II)

Time Allowed:- 20 minutes PAPER CODE 4481 Maximum Marks:- 17

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. Write PAPER CODE, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q.1

- 1) Classification of elements in the modern periodic table is based on  
(A) Law of Triads (B) Law of octaves (C) Moseley law (D) Mendeleev's periodic law
- 2) Chile saltpetre has the chemical formula  
(A)  $\text{NaNO}_3$  (B)  $\text{KNO}_3$  (C)  $\text{CaCO}_3$  (D)  $\text{Na}_2\text{CO}_3$
- 3) Aluminium oxide is  
(A) Acidic Oxide (B) Basic Oxide (C) Amphoteric Oxide (D) Non of these
- 4) Aqua Regia can dissolve noble metals due to the formation of  
(A) Nitrosyl chloride (B) Nascent Nitrogen (C) Nitric oxide (D) Nitrous Acid
- 5) Which halogen occurs naturally in a positive oxidation state  
(A) Flourine (B) Chlorine (C) Bromine (D) Iodine
- 6) Group VI B of Transition elements contain  
(A) Zn, Cd, Hg (B) Fe, Ru, Os (C) Cr, Mo, W (D) Mn, Te, Re
- 7) Select from the following the one which is alcohol  
(A)  $\text{CH}_3 - \text{CH}_2 - \text{OH}$  (B)  $\text{CH}_3 - \text{O} - \text{CH}_3$  (C)  $\text{CH}_3 - \text{COOH}$  (D)  $\text{CH}_3 - \text{CH}_2 - \text{Br}$
- 8) Preparation of vegetable ghee involves  
(A) Halogenation (B) Hydrogenation (C) Hydroxylation (D) Dehydrogenation
- 9) Which compound is the most reactive one  
(A) Benzene (B) Ethene (C) Ethane (D) Ethyne
- 10) Nucleophile is usually  
(A) Basic in character (B) Acidic in character (C) Basic and positively charged (D) Basic and Negatively charged
- 11) Which of the following compound is called Universal Solvent?  
(A)  $\text{H}_2\text{O}$  (B)  $\text{CH}_3\text{OH}$  (C)  $\text{C}_2\text{H}_5\text{OH}$  (D)  $\text{CH}_3 - \text{O} - \text{CH}_3$
- 12) Acetone react with HCN to form cyanohydrin. It is an example of  
(A) Electrophillic addition (B) Electrophillic substitution (C) Nucleophillic addition (D) Nucleophillic substitution
- 13) Which acid is used in manufacture of synthetic fiber  
(A) Formic Acid (B) Acetic Acid (C) Oxalic Acid (D) Carbonic Acid
- 14) Which one of the following element is not present in all proteins.  
(A) Carbon (B) Hydrogen (C) Nitrogen (D) Sulpher
- 15) Micronutrient element are required in Quantity  
(A) 4 - 40 gm (B) 6 - 200 gm (C) 6 - 200 kg (D) 4 - 40 kg
- 16) The pH range of acid rain is  
(A) 7 - 6.5 (B) 6.5 - 6 (C) 6 - 5.6 (D) less than 5
- 17) Which one of the following substance cause acid rain?  
(A)  $\text{SO}_2$  (B) Hydro carbons (C) Chloroflourocarbons (D)  $\text{O}_3$

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1224 (Inter Part - II)

(Session 2020-22 to 2022-24)

Chemistry (Subjective)

(Group I)

Paper (II)

Time Allowed: 2.40 hours

SGD-1-24  
Section ----- I

Maximum Marks: 68

2. Answer briefly any Eight parts from the followings:-  $8 \times 2 = 16$
- Why 2<sup>nd</sup> ionization energy is greater than 1<sup>st</sup> ionization energy?
  - Why is diamond non-conductor but graphite is conductor?
  - What is general trend for the solubility of sulphates of alkaline earth metals?
  - Why lime is added to acidic soil? (v) How does  $K_2Cr_2O_7$  oxidize the  $H_2S$  and  $FeSO_4$ ?
  - How zinc coating prevents iron from corrosion?
  - How antiknocking agents are prepared from alkyl halides? (viii) What is wurtz synthesis?
  - What is function of nucleic acid? (x) How temperature affects the activity of enzymes?
  - How triglycerides are hydrolyzed? (xii) What is meant by dry cleaning in paper manufacturing?
3. Answer briefly any Eight parts from the followings:-  $8 \times 2 = 16$
- Why  $N_2O$  is called laughing gas? (ii) Write down any four uses of Nitric acid.
  - What are Freons and Teflon? (iv) Why HF is weaker acid than HCl? Justify.
  - Define aromatic compound by giving two examples. (vi) How vital theory was rejected?
  - Convert methane into methyl alcohol. (viii) Write down the industrial preparation of Ethyne.
  - Mention the four physical properties of Ethene.
  - Mention any two conditions which are required for the formation of smog.
  - Write short note on chemical oxygen demand. (COD).
  - Is detergent are threat to aquatic life? Justify.
4. Answer briefly any Six parts from the followings:-  $6 \times 2 = 12$
- Why are liquid silicones preferred over ordinary organic lubricants?
  - What is the action of an aqueous solution of borax on litmus?
  - How will you convert boric acid into borax and vice versa.
  - What is Wurtz-Fittig reaction? (v) How bakelite is produced? Give reaction.
  - How methanol and ethanol can be differentiated?
  - What is Tollen's test? Give reaction. (viii) How carboxylic acid is prepared from alkene?
  - Differentiate between essential and non-essential amino acids.

Section ----- II

Note: Attempt any three questions.

$(8 \times 3 = 24)$

- What are the improvements made in the Mendeleev's periodic table?
  - Describe the role of Gypsum in agriculture and industry. (Any four points of each)
- What happens when bleaching powder reacts with  
(i) dil  $H_2SO_4$  (ii) excess of conc.  $H_2SO_4$  (iii)  $NH_3$  (iv)  $CO_2$
  - What is meant by setting of cement? What are the reactions taking place in first twenty four hours and between one to seven days?
- Discuss  $sp^2$  - hybridization with a suitable example.
  - How would you prepare following compounds from Grignard reagent?  
(i) 1-butanol (ii) 2-butanol (iii) Cyanogen chloride (iv) ethane
- How is ethene prepared by Kolbe's electrolytic method. Give its mechanism also.
  - Give the reactions of acetone with. (i) HCN (ii)  $NH_2OH$  (iii)  $NH_2NH_2$  (iv)  $NaHSO_3$
- Describe oxidation reactions of Benzene and alkyl benzene.
  - Explain the following terms  
(i) Absolute alcohol (ii) Methylated spirit (iii) Rectified spirit (iv) Denaturing of alcohols

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Chemistry (Objective) *SGD-2-24* Group – II Paper (II)

Time Allowed:- 20 minutes

PAPER CODE 4482

Maximum Marks:- 17

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. Write PAPER CODE, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q.1

- 1) Which of the following metal does not form ionic hydride.  
 (A) Ba (B) Mg (C) Ca (D) Sr
- 2) The mineral  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$  has the general name.  
 (A) Gypsum (B) Dolomite (C) Calcite (D) Epsom salt
- 3) Which of the following element is not present abundantly in earth's crust?  
 (A) Silicon (B) Aluminium (C) Sodium (D) Oxygen
- 4) Which catalyst is used in contact process  
 (A)  $\text{Fe}_2\text{O}_3$  (B)  $\text{V}_2\text{O}_5$  (C)  $\text{SO}_3$  (D)  $\text{Ag}_2\text{O}$
- 5) Which halogen will react spontaneously with Au to produce  $\text{Au}^{+3}$ ?  
 (A)  $\text{Br}_2$  (B)  $\text{F}_2$  (C)  $\text{I}_2$  (D)  $\text{Cl}_2$
- 6) The strength of binding energy of transition elements depends on  
 (A) Number of electron pairs (B) Number of unpaired electrons (C) Number of neutrons (D) Number of protons
- 7) In t-butyl alcohol, the tertiary carbon is bonded to  
 (A) Two hydrogen atoms (B) Three hydrogen atoms (C) One hydrogen atom (D) No hydrogen atom
- 8) Synthetic rubber is made by polymerization of  
 (A) Chloroform (B) Acetylene (C) Divinylacetylene (D) Chloroprene
- 9) The electrophile in aromatic sulphonation is  
 (A)  $\text{H}_2\text{SO}_4$  (B)  $\text{HSO}_3^+$  (C)  $\text{SO}_3$  (D)  $\text{SO}_3^+$
- 10) Ethyl magnesium bromide react with water to form  
 (A) Ethane (B) Methane (C) Propane (D) Butane
- 11) Rectified spirit contains alcohol about  
 (A) 80% (B) 85% (C) 90% (D) 95%
- 12) The carbon atom of a carbonyl group is  
 (A)  $\text{sp}$  hybrid (B)  $\text{sp}^2$  hybrid (C)  $\text{sp}^3$  hybrid (D) None of those
- 13) Which of the following is not a fatty acid?  
 (A) Propanoic Acid (B) Acetic Acid (C) Phthalic Acid (D) Butanoic Acid
- 14) The reaction between fat and NaOH is called  
 (A) esterification (B) Hydrogenolysis (C) Fermentation (D) Saponification
- 15) Ammonium Nitrate fertilizer is not used for which crop.  
 (A) Cotton (B) Wheat (C) Sugar cane (D) Paddy rice
- 16) Ecosystem is a smaller unit of  
 (A) Lithosphere (B) Hydrosphere (C) Biosphere (D) Atmosphere
- 17) Which gas is not a pollutant  
 (A)  $\text{SO}_2$  (B) CO (C)  $\text{NO}_2$  (D)  $\text{CO}_2$

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1224 (Inter Part - II) (Session 2020-22 to 2022-24)

Chemistry (Subjective)

(Group II)

Paper (II)

Time Allowed: 2.40 hours

SGD-2-24

Maximum Marks: 68

Section ----- I

2. Answer briefly any Eight parts from the followings:-  $8 \times 2 = 16$
- (i) What improvements were made in Mendleev's periodic table?
  - (ii) The radius of Na is 157 pm while that of  $\text{Na}^+$  is 95 pm. Why?
  - (iii) What happens when Lithium carbonate and Lithium nitrates are heated?
  - (iv) Why is calcium important for plant growth? (v) How does acidified  $\text{KMnO}_4$  Oxidize  $\text{FeSO}_4$  and oxalic acid?
  - (vi) Why do the transition element show variable valency?
  - (vii) Why alkyl Iodides are the most reactive among alkyl halides?
  - (viii) What is leaving group. Give two examples. (ix) Write name of factors with affect the enzyme activity.
  - (x) What are the Differences between DNA and RNA? (xi) Define acid number and Iodine number with example.
  - (xii) Why wet process is favourable for manufacturing of cement in Pakistan?
3. Answer briefly any Eight parts from the followings:-  $8 \times 2 = 16$
- (i)  $\text{NO}_2$  is a strong oxidizing agent. Prove the truth of this statement giving example.
  - (ii) Write down any four uses of sulphuric acid. (iii) Why HF is weaker acid than HCL? Justify.
  - (iv) What are Freons and Teflon? (v) Draw the various isomer of Pentane ( $\text{C}_5\text{H}_{12}$ )
  - (vi) Why there is no free rotation around a double bond and a free rotation around a single bond. Justify.
  - (vii) How does ethyne react with (a) Halogen acid (b) Ammonical cuprous chloride
  - (viii) Write short note on acidity of Ethyne. (ix) Write down any four uses of ethene.
  - (x) Mention any two conditions which are required for the formation of smog.
  - (xi) Is detergents are threat to aquatic life? Justify. (xii) Write short note on dissolved oxygen (DO).
4. Answer briefly any Six parts from the followings:-  $6 \times 2 = 12$
- (i) What is the alkanolic acid. How it is prepared from alkanol?
  - (ii) Justify the acidic and basic character of amino acids.
  - (iii) Prepare borax from (a) Colemanite (b) Boric acid
  - (iv) How "Al" reacts with hydrogen and halogen? (v) Justify " $\text{CO}_2$ " is non polar in nature.
  - (vi) Write the name and structure of two aromatic compounds containing two benzene rings.
  - (vii) Why phenol is more acidic than alcohol? (viii) Ethanol has highest boiling point than di ethyl ether.
  - (ix) Write the oxidation reaction of aldehyde with (a)  $\text{K}_2\text{Cr}_2\text{O}_7 / \text{H}_2\text{SO}_4$  (b) Tollen's reagent

Section ----- II

Note: Attempt any three questions.

$(8 \times 3 = 24)$

- 5. (a) Define periodic table. What improvements are made in Mendeleev's periodic table?
- (b) How sodium metal is produced by Down's cell. Sketch labelled Down's cell.
- 6. (a) What are "Disproportionation reactions"? Explain your answer with the reaction of chlorine with hot and cold NaOH.
- (b) What do you understand by the term "Setting of cement"? Also discuss the reactions taking place in first 24 hours?
- 7. (a) What are the various sources of organic compounds? Give significance of Coal amongst these sources.
- (b) Using ethyl bromide as a starting material how would you prepare the following compounds?  
(i) n-butane (ii) Ethyl alcohol (iii) Ethene (iv) Ethane
- 8. (a) Explain the following reactions. (i) Ozonolysis of ethene (ii) Oxidation of ethyne by  $\text{KMnO}_4$
- (b) What is Cannizzaro's reaction? Write down its mechanism.
- 9. (a) Describe the stability of Benzene molecule by estimating Heats of Hydrogenation.
- (b) Explain the following terms using ethyl alcohol as an example.  
(i) Oxidation (ii) Dehydration (iii) Esterification (iv) Ether formation

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