

# Bahawalpur Board-2024



<b>Chemistry</b>	<b>(B)</b>	<b>L.K.No. 1465</b>	<b>Paper Code No. 8483</b>
<b>Paper II</b>	<b>( Objective Type )</b>	<b>Inter (1<sup>st</sup> - A - Exam 2024 )</b>	
<b>Time :</b>	<b>20 Minutes</b>	<b>Inter ( Part - II )</b>	<b>(Group Ist)</b>
<b>Marks :</b>	<b>17</b>	<b>Session (2020 – 22) to (2022 – 24)</b>	

**Note :** Four choices A , B , C , D to each question are given. Which choice is correct fill that circle in front of that Question No. on the Objective Bubble Sheet. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

<b>Q.No.1</b>	<b>Reducing Smog contains high concentration of :</b>			
(1)	(A) O <sub>3</sub>	(B) NO	(C) SO <sub>2</sub> ●	(D) H <sub>2</sub> O <sub>2</sub>
(2)	<b>Peroxyacetyl Nitrate (PAN) is an irritant to human beings and it affects :</b>			
	(A) Eyes ●	(B) Ears	(C) Stomach	(D) Nose
(3)	<b>Which woody raw material is used for the manufacture of Paper Pulp :</b>			
	(A) Cotton	(B) Bagasse	(C) Poplar ●	(D) Rice Straw
(4)	<b>Which one of the following elements is not present in all Proteins :</b>			
	(A) Carbon	(B) Sulphur ●	(C) Nitrogen	(D) Hydrogen
(5)	<b>Which Acid is used in the manufacture of synthetic fibre :</b>			
	(A) Formic Acid	(B) Oxalic Acid	(C) Carbonic Acid	(D) Acetic Acid ●
(6)	<b>Cannizzaro's reaction is not given by :</b>			
	(A) Formaldehyde	(B) Acetaldehyde	(C) Benzaldehyde	(D) Trimethyl Acetaldehyde
(7)	<b>Which Enzyme is not involved in the Fermentation process :</b>			
	(A) Diastase	(B) Zymase	(C) Urease ●	(D) Invertase
(8)	<b>The removal of two atoms or groups from adjacent Carbon atoms in the presence of a base is called :</b>			
	(A) Substitution Reaction	(B) Elimination Reaction ●	(C) Hydrolytic Reaction	(D) Decomposition Reaction
(9)	<b>Aromatic Hydrocarbons are the derivative of :</b>			
	(A) Normal series of Paraffins	(B) Alkene	(C) Benzene ●	(D) Cyclohexane
(10)	<b>Preparation of vegetable ghee involves :</b>			
	(A) Halogenation	(B) Hydrogenation	(C) Hydroxylation	(D) Dehydrogenation
(11)	<b>Which Set of Hybrid Orbitals has Planar Triangular Shape :</b>			
	(A) sp <sup>3</sup>	(B) sp	(C) sp <sup>2</sup> ●	(D) dsp <sup>2</sup>
(12)	<b>The Colour of Transition Metal Complexes is due to :</b>			
	(A) d – d Transition of electrons ●	(B) Ionization	(C) Paramagnetic nature of Transition Elements	(D) Loss of s – electrons
(13)	<b>The Anhydride of HClO<sub>4</sub> is :</b>			
	(A) ClO <sub>3</sub>	(B) ClO <sub>2</sub>	(C) Cl <sub>2</sub> O <sub>5</sub>	(D) Cl <sub>2</sub> O <sub>7</sub> ●
(14)	<b>TNT is formed by the reaction of Nitric Acid with :</b>			
	(A) Phenol	(B) Toluene	(C) Glycerol	(D) Aniline
(15)	<b>Which Metal is used in Thermite Process because of its activity :</b>			
	(A) Iron	(B) Copper	(C) Aluminium	(D) Zinc
(16)	<b>Chile Saltpetre has the Chemical Formula :</b>			
	(A) NaNO <sub>3</sub>	(B) KNO <sub>2</sub>	(C) Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub>	(D) Na <sub>2</sub> CO <sub>3</sub> . H <sub>2</sub> O
(17)	<b>Beryllium Oxide is an example of :</b>			
	(A) Acidic Oxide	(B) Basic Oxide	(C) Amphoteric Oxide	(D) Peroxide

# Bahawalpur Board-2024



Roll No.	1465 - 15000	Inter ( Part - II)	Session (2020 – 22) to (2022 – 24)
Chemistry (Subjective )	Inter ( 1st – A – Exam – 2024)	Group 1st	Time 2 : 40 Hours Marks : 68

Note : It is compulsory to attempt any (8 – 8) Parts each from Q.No. 2, Q.No.3 and attempt any (6) Parts from Q.No.4. Attempt any (3) Questions from Part – II. Write same Question No. and Its Part No. as given in the Question Paper.

Make Diagram where necessary.

Part - I

22 x 2 = 44

Q.No.2	(i)	Give the two points of similarity between Hydrogen and Alkali Metals.	
	(ii)	Define Hydration Energy. Give the factors affecting it.	
	(iii)	Write down two Characteristics of Lipids.	(iv) How is Lime Mortar prepared?
	(v)	How the Chromate Ions are converted into Dichromate Ions? Give the reaction involved.	(vi) Differentiate between Paramagnetic and Diamagnetic substances.
	(vii)	How Grignard Reagent is prepared? Why is it very reactive?	(viii) Give the two points of difference between $S_N1$ and $S_N2$ reactions.
	(ix)	How is Polyvinyl Chloride prepared? Give its two uses.	(x) Why is the Aqueous Solution of $Na_2CO_3$ Alkaline in nature?
	(xi)	Give the effect of temperature on Enzyme activity.	(xii) Give the reactions taking place between 1–7 days in setting of Cement.
	(i)	Why does Aqua Regia dissolve Gold and Platinum?	(ii) Write down comparison of properties of Oxygen and Sulphur ( any two).
	(iii)	What are Freons and Teflon?	(iv) Name the Gas used for Earthquake Prediction.
	(v)	What is the role of Homologous Series in Organic Compounds ?	(vi) Why the rates of Organic Reactions are slow?
	(vii)	How Methane is converted into $HCHO$ in the presence of Catalyst (Cu) under high Temperature and Pressure?	(viii) Describe Markownikov's Rule for the Addition of $HX$ to Alkene.
	(ix)	Why Terminal Alkynes are acidic in nature? Give example.	(x) What is the role of CFCs in destroying Ozone layer?
	(xi)	Define Dissolved Oxygen (DO) for the quality of Water.	(xii) Describe Harmful effects of Chlorination of Water.
Q.No.3	(i)	What happens when Borax is heated with $H_2SO_4$ ?	
	(ii)	How does Aluminium reacts with $H_2SO_4$ and $N_2$ ?	
	(iii)	What is Asbestos? Give its uses.	
	(iv)	What is Wurtz Fittig Reaction?	
	(v)	Write the Structural Formula and names of two Hydroxy Acids.	
	(vi)	How will you prepare Ethanol from Starch?	
	(vii)	What is Cannizaro's Reaction? Give one example.	
	(viii)	How $\alpha$ – Hydroxy Carboxylic Acid are prepared from Amino Acid?	
	(ix)	Write reaction of Ethyne with Water for formation of Acetic Acid.	

( Part – II )

3 x 8 = 24

Q.No.5	(a)	Justify the Position of Hydrogen with group I – A elements.	(4)
	(b)	Lithium shows peculiar behaviour. Mention any eight points.	(4)
Q.No.6	(a)	Explain Peculiar behaviour of Fluorine differ from other Halogens.	(4)
	(b)	What are Phosphatic Fertilizers and their importance with respect to Diammonium Phosphate?	(4)
Q.No.7	(a)	Define $sp^2$ Hybridization. Discuss it with a suitable example along with labelled diagram.	(4)
	(b)	How can you Prepare the following from Ethyl Chloride : (i) Propane Nitrile (ii) n – Butane (iii) Tetraethyl Lead (iv) Ethane	(4)
Q.No.8	(a)	Why Acetylene and Terminal Alkynes give acidic behaviour ? Give their evidences.	(4)
	(b)	How Acetaldehyde reacts with : (i) $H_2NOH$ (ii) $H_2N - NH_2$ (iii) 2 , 4 – DNPH (iv) Phenyl Hydrazine.	(4)
Q.No.9	(a)	Give detail mechanism for the preparation of Acetophenone through Friedel Crafts Acylation reaction.	(4)
	(b)	How is Methyl Alcohol obtained on large Scale? How can it be distinguished from Ethyl Alcohol?	(4)



# Bahawalpur Board-2024



<b>Chemistry</b>	<b>(A)</b>	<b>L.K.No. 1466</b>	<b>Paper Code No. 8482</b>
<b>Paper II</b>	<b>( Objective Type )</b>	<b>Inter ( Ist - A - Exam 2024 )</b>	
<b>Time :</b>	<b>20 Minutes</b>	<b>Inter ( Part - II )</b>	<b>( Group 2nd )</b>
<b>Marks :</b>	<b>17</b>	<b>Session (2020 - 22) to (2022 - 24)</b>	

**Note :** Four choices A, B, C, D to each question are given. Which choice is correct fill that circle in front of that Question No. on the Objective Bubble Sheet. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

<b>Q.No.1</b>	<b>Chile Saltpetre has the Chemical Formula :</b> (A) $\text{NaNO}_3$ (B) $\text{KNO}_3$ (C) $\text{Na}_2\text{B}_4\text{O}_7$ (D) $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$		
<b>(2)</b>	<b>Which element forms an Ion with charge +3 :</b> (A) Beryllium (B) Aluminium (C) Carbon (D) Silicon		
<b>(3)</b>	<b>Anhydride of <math>\text{HClO}_4</math> is :</b> (A) $\text{ClO}_3$ (B) $\text{ClO}_2$ (C) $\text{Cl}_2\text{O}_5$ (D) $\text{Cl}_2\text{O}_7$		
<b>(4)</b>	<b>Which of the following is a Typical Transition Metal :</b> (A) Sc (B) Y (C) Ra (D) Co		
<b>(5)</b>	<b>A Double Bond consists of :</b> (A) Two Sigma Bonds (B) One Sigma and One Pi Bond (C) One Sigma and Two Pi Bonds (D) Two Pi Bonds		
<b>(6)</b>	<b>Which one of the following Gases is used for Artificial Ripening of Fruits :</b> (A) Ethene (B) Ethyne (C) Methane (D) Propane		
<b>(7)</b>	<b>The Conversion of n - Hexane into Benzene by heating in the Presence of Pt is called :</b> (A) Isomerization (B) Rearrangement (C) De Alkylation (D) Aromatization		
<b>(8)</b>	<b>Elements of the Periodic Table are classified into blocks :</b> (A) Four (B) Three (C) Five (D) Six		
<b>(9)</b>	<b>Sulphuric Acid acts as a Dehydrating agent in reaction with :</b> (A) Formic Acid (B) Zinc (C) Copper (D) Sodium Hydroxide		
<b>(10)</b>	<b>The removal of two atoms or groups from adjacent Carbon atoms in the presence of a base is called :</b> (A) Substitution Reaction (B) Elimination Reaction (C) Hydrolytic Reaction (D) Decomposition Reaction		
<b>(11)</b>	<b>Unpolluted Rain Water has a pH of :</b> (A) 4.9 (B) 5.6 (C) 5.3 (D) 7.0		
<b>(12)</b>	<b>Newspaper can be recycled again and again by how many times :</b> (A) 2 (B) 3 (C) 4 (D) 5		
<b>(13)</b>	<b>The Enzyme not involved in Fermentation of Starch :</b> (A) Diastase (B) Zymase (C) Urease (D) Invertase		
<b>(14)</b>	<b>Cannizzaro's reaction is not given by :</b> (A) Formaldehyde (B) Acetaldehyde (C) Benzaldehyde (D) Triethyl Acetaldehyde		
<b>(15)</b>	<b>Which reagent is used to reduce a Carboxylic group to an Alcohol :</b> (A) $\text{H}_2 / \text{Ni}$ (B) $\text{H}_2 / \text{Pt}$ (C) $\text{NaBH}_4$ (D) $\text{LiAlH}_4$		
<b>(16)</b>	<b>Which one of the following Enzymes brings about the Hydrolysis of Fats :</b> (A) Urease (B) Maltase (C) Zymase (D) Lipase		
<b>(17)</b>	<b>Phosphorus helps the growth of :</b> (A) Roots (B) Leave (C) Stem (D) Seed		

# Bahawalpur Board-2024



Roll No.	1466 - / 5000	Inter ( Part - II)	Session (2020 – 22) to (2022 – 24)
Chemistry (Subjective )	Inter ( Ist – A – Exam – 2024 )	(Group 2nd)	Time 2 : 40 Hours Marks : 68

Note : It is compulsory to attempt any (8 – 8) Parts each from Q.No. 2, Q.No.3 and attempt any (6) Parts from Q.No.4. Attempt any (3) Questions from Part – II. Write same Question No. and its Part No. as given in the Question Paper.

Make Diagram where necessary.

Part - I

22 x 2 = 44

Q.No.2	(i)	The Oxidation State vary in a period but remain almost constant in a group. Write reason briefly.	
	(ii)	Define Shielding Effect.	
	(iii)	Why is 2% Gypsum added in the Cement?	(iv) BeO is Amphoteric . Prove it.
	(v)	Why $\text{Fe}^{+3}$ shows maximum Paramagnetic behaviour among first Transition Series?	(vi) What is Chromyl Chloride test? Give equation also.
	(vii)	What is Wurtz Synthesis ? Give equation also.	(viii) How Propanoic Acid is prepared from Ethyl Magnesium Bromide ? Give equation.
	(ix)	Define Iodine Number.	(x) Differentiate between Ligases and Lyases.
	(xi)	Write down any two importance of Proteins.	(xii) Why Phosphatic Fertilizers are provided to plants?
Q.No.3	(i)	Complete and balance the following Chemical equations : (a) $\text{P} + \text{NO} \rightarrow ?$ (b) $\text{NO} + \text{Cl}_2 \rightarrow ?$	(ii) $\text{P}_2\text{O}_5$ is a powerful Dehydrating Agent . Prove it giving example.
	(iii)	Arrange the following ions in order of increasing size : $\text{F}^-$ , $\text{Cl}^-$ , $\text{I}^-$ , $\text{Br}^-$ .	(iv) What is " Iodized Salt " ?
	(v)	What is the Composition of Natural Gas? Give its use.	(vi) Why there is no free Rotation around a Carbon – Carbon double bond?
	(vii)	Why Ethene is more reactive than Ethane?	(viii) How to Prepare good quality Polythene?
	(ix)	Convert : Propyne $\rightarrow$ Acetone .	(x) What is Oxidizing Smog?
	(xi)	How to measure the quality of Water naturally?	(xii) What are the Harmful effects of Chlorination of water?
Q.No.4	(i)	How does Borax serve as a Water Softening Agent?	
	(ii)	Give names alongwith the formulas of three important ores of Aluminium.	
	(iii)	Describe Four important uses of Silicates.	
	(iv)	What is the difference between Ortho – Para and Meta Directing Groups in the Mono- Substituted Benzene Ring?	
	(v)	What is the difference between Rectified Spirit and Absolute Alcohol?	
	(vi)	Write IUPAC names of the following Compounds : (a) $(\text{CH}_3)_3 \text{COH}$ (b) $(\text{CH}_3)_2 \text{CHCH}_2\text{OH}$	
	(vii)	Give General Mechanism of the Acid Catalyzed Nucleophilic Addition Reaction of Aldehydes and Ketones.	
	(viii)	What are Peptides ? How are Dipeptides formed?	
	(ix)	What happens when Calcium Acetate is Heated?	



( Part – II )

3 x 8 = 24

Q.No.5	(a)	Mention four points of similarity of Hydrogen each with Alkali Metals and Halogens.	2+2=4
	(b)	Describe with labelled diagram the manufacture of Sodium Hydroxide by Diaphragm Cell.	(4)
Q.No.6	(a)	What is Bleaching Powder? How can it be prepared by Beckmann's method?	(4)
	(b)	How Urea is manufactured? Give the reactions involved.	(4)
Q.No.7	(a)	What is Cracking of Petroleum and discuss its different types?	(4)
	(b)	Explain $\text{S}_{\text{N}}1$ Reaction with Complete Mechanism.	(4)
Q.No.8	(a)	Explain the Markownikov's Rule with reaction mechanism.	(1 + 3) = (4)
	(b)	What is Aldol Condensation ? Why Acetaldehyde give this reaction ? Justify your answer with mechanism.	(1 + 3) = (4)
Q.No.9	(a)	Write down the mechanism of : (i) Friedel Craft Alkylation   (ii) Friedel Craft Acylation	(4)
	(b)	How Lucas Test is used to identify Primary , Secondary and Tertiary Alcohol?	(4)





Chemistry	(C)	L.K.No. 1071	Paper Code No. 8485
Paper II	( Objective Type )	Ist – A – Exam – 2023	(Group Ist)
Time :	20 Minutes	Inter ( Part II )	
Marks :	17	Session (2019 – 21) to (2021 – 23)	

Note : Four possible choices A, B, C, D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

### Bahawalpur Board-2023

Q.No.1	Tincal is a Mineral of :	(A) Al (B) B (C) Si (D) C
(1)		
(2)	Chile Saltpetre has the Chemical Formula :	(A) $\text{NaNO}_3$ (B) $\text{KNO}_3$ (C) $\text{Na}_2\text{B}_4\text{O}_7$ (D) $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$
(3)	Mark the Correct Statement :	(A) All Lanthanides are present in the same group (B) All Halogens are present in the same period (C) All the Alkali Metals are present in the same group (D) All the noble gases are present in the same period
(4)	Oxidation of NO in air produces :	(A) $\text{N}_2\text{O}$ (B) $\text{N}_2\text{O}_3$ (C) $\text{N}_2\text{O}_4$ (D) $\text{N}_2\text{O}_5$
(5)	Linear Shape is associated with which set of Hybrid Orbitals :	(A) $\text{sp}$ (B) $\text{sp}^2$ (C) $\text{sp}^3$ (D) $\text{dsp}^2$
(6)	The strength of binding energy of transition elements depends upon :	(A) Number of Electron pairs (B) Number of Unpaired Electrons (C) Number of Neutrons (D) Number of Protons
(7)	Which Halogen occurs naturally in a positive Oxidation state :	(A) Fluorine (B) Chlorine (C) Bromine (D) Iodine
(8)	Preparation of Vegetable Ghee Involves :	(A) Halogenation (B) Hydrogenation (C) Hydroxylation (D) Dehydrogenation
(9)	Methyl Alcohol is not used :	(A) As a Solvent (B) As an Anti-freezing Agent (C) As a substitute for Petrol (D) For Denaturing of Ethyl Alcohol
(10)	Elimination Bimolecular reactions Involve :	(A) First Order Kinetics (B) Second Order Kinetics (C) Third Order Kinetics (D) Zero Order Kinetics
(11)	The Electrophile In Aromatic Sulphonation is :	(A) $\text{H}_2\text{SO}_4$ (B) $\text{HSO}_4^-$ (C) $\text{SO}_3^-$ (D) $\text{SO}_3^+$
(12)	The other name of Phenol is :	(A) Carbonic Acid (B) Carboxylic Acid (C) Carboxylic Acid (D) Adipic Acid
(13)	Select the Monomers of Nylon – 6,6 :	(A) Adipic Acid and Ethylene Glycol (B) Acetic Acid and Hexamethylene Diamine (C) Adipic Acid and Hexamethylene Diamine (D) Acetic Acid and Ethylene Glycol
(14)	Ozone Layer is present in which region of Atmosphere :	(A) Troposphere (B) Stratosphere (C) Thermosphere (D) Ionosphere
(15)	Which One will not give Silver Mirror Test :	(A) Formaldehyde (B) Acetaldehyde (C) Acetone (D) Propionaldehyde
(16)	Ammonia contains how much percentage of Nitrogen :	(A) 50 % (B) 82 % (C) 46 % (D) 100 %
(17)	The number of Peptide Bonds in a Dipeptide is :	(A) 1 (B) 2 (C) 3 (D) 4





Roll No.	1071 - 18000	Inter ( Part II )	Session (2019 - 21) to (2021 - 23)
Chemistry (Subjective )	1st - A - Exam 2023	Group 1st	Time 2 : 40 Hours Marks : 68

Note: It is compulsory to attempt any (8 - 8) Parts each from Q.No. 2 , Q.No.3 and attempt any (6) Parts from Q.No.4. Attempt any (3) Questions from Part - II .Write same Question No. and Its Part No. as given in the Question Paper.

Make Diagram where necessary.

Part - I

22 x 2 = 44

Bahawalpur Board-2023

Q.No.2	(I)	Write any two points in which Boron is different from its family members.
	(II)	Why is Increase in Atomic Size not regular in case of Group III - A elements ?
	(III)	What are Silicones ? Give their any two properties.
	(IV)	What are Fused Membered Polycyclic Compounds ? Draw structure of two compounds.
	(V)	What do you mean by Side Chain Oxidation of Toluene ?
	(VI)	How did Kekule support his theory about structure of Benzene ? Give any two points.
	(VII)	What are Thermoplastic Polymers ? Give one example.
	(VIII)	What are Polysaccharides ? Give two examples.
	(IX)	What is Saponification Number ? Give one example.
	(X)	Which human activities are responsible for the release of Hydrocarbons in air ?
	(XI)	How do the Detergents cause the Water Pollution?
	(XII)	How is Acid Rain harmful for Aquatic Animals?
Q.No.3	(I)	What is meant by Hybridization ?
	(II)	Write down the structures of Isomers having Molecular Formula C <sub>4</sub> H <sub>10</sub> .
	(III)	How is Ethyne Polymerized to Neoprene ?
	(IV)	How can you differentiate between Saturated and Unsaturated Hydrocarbons?
	(V)	How is Ethane produced from Ethyl Magnesium Bromide ?
	(VI)	Why is SO <sub>3</sub> dissolved in H <sub>2</sub> SO <sub>4</sub> and not in water ?
	(VII)	Write down the reaction of Cu with : (a) dil. HNO <sub>3</sub> (b) Conc. HNO <sub>3</sub>
	(VIII)	How is H <sub>3</sub> PO <sub>3</sub> produced from PCl <sub>5</sub> ?
	(IX)	Write any two methods for the preparation of Alkyl Halides from Alcohol.
	(X)	Write down the reaction of Ammonia with Ethyl Bromide .
	(XI)	What are Essential Qualities for a Good Fertilizer ? (Any Four )
	(XII)	Write down any four Non-Woody Raw Materials for Paper Manufacturing.
Q.No.4	(I)	Define Paramagnetism and Diamagnetism.
	(II)	What will happen when KMnO <sub>4</sub> reacts with : (a) Oxalic Acid (b) KOH
	(III)	What are the Substitutional Alloys ?
	(IV)	How can we distinguish between Ethanol and Methanol ?
	(V)	What will happen when Diethyl Ether react with HI ?
	(VI)	Write structural formula of Glycol and Glycerol.
	(VII)	What product would you obtain when Acetaldehyde reacts with 2, 4 - DNPH ?
	(VIII)	Write the Silver Mirror Test .
	(IX)	Write down reaction of Acetic Acid with : (a) Thionyl Chloride (b) PCl <sub>5</sub>

Part - II

3 x 8 = 24

Q.No.5	(a)	Explain the position of Hydrogen in I - A and VII - A Groups. (4)
	(b)	What is the role of Gypsum in Agriculture ? (4)
Q.No.6	(a)	Discuss the Beckmann's Method for the preparation of Bleaching Powder. (4)
	(b)	Write down the Bleaching Step Involved in the manufacturing of Paper Process. (4)
Q.No.7	(a)	Why there is no free rotation around a double bond and a free rotation around a single bond ? Discuss Cis - trans Isomerism. (4)
	(b)	What happens when : (a) Benzene is heated with Conc. H <sub>2</sub> SO <sub>4</sub> at 250°C . (b) Chlorine is passed through Benzene in Sunlight. (c) A mixture of Benzene vapours and air are passed over heated Vanadium Pentoxide. (d) Benzene is burnt in free supply of Air. (4)
Q.No.8	(a)	How will you Synthesize the following compounds starting from Ethyne : (a) Benzene (b) Ethane (c) Oxalic Acid (d) Methyl Cyanide (4)
	(b)	Discuss S <sub>N</sub> 1 reactions in detail. (4)
Q.No.9	(a)	How Carbonyl Compounds are reduced by NaBH <sub>4</sub> ? Give the Mechanism also. (4)
	(b)	How will you prepare Carboxylic Acids from : (I) Hydrolysis of Esters (II) Oxidative Cleavage of Alkenes (III) Alkane Nitrile (IV) Alcohols (4)





Chemistry	(B)	L.K.No. 1072	Paper Code No. 8484
Paper II	( Objective Type )	1st – A – Exam – 2023	( Group 2 <sup>nd</sup> )
Time :	20 Minutes	Inter ( Part II )	
Marks :	17	Session ( 2019 – 21 ) to ( 2021 – 23 )	

Note : Four possible choices A , B , C , D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

Q.No.1	Ethanol can be converted into Ethanoic Acid by : (A) Hydrogenation (B) Hydration (C) Oxidation (D) Fermentation		
(1)	Which One is most Toxic :	(A) CO <sub>2</sub> (B) CO (C) O <sub>2</sub> (D) CH <sub>4</sub>	
(3)	Which Woody Raw Material is used for the manufacture of Paper Pulp :	(A) Eucalyptus (B) Bagasse (C) Wheat Straw (D) Bamboo	
(4)	Which of these Polymers is a Condensation Polymer :	(A) nylon - 6, 6 (B) Polystyrene (C) Polyethene (D) Polyvinylchloride	
(5)	Acetic Acid contains :	(A) A Hydroxyl Group (B) A Carboxyl Group (C) A Hydroxyl and Carboxyl Group (D) A Carboxyl and an Aldehydic Group	
(6)	The Carbon Atom of a Formaldehyde is :	(A) sp - Hybridized (B) sp <sup>2</sup> - Hybridized (C) sp <sup>3</sup> - Hybridized (D) dsp <sup>2</sup> - Hybridized	
(7)	Which Enzyme is not involved in fermentation of Starch :	(A) Diastase (B) Zymase (C) Urease (D) Maltose	
(8)	Grignard Reagent is reactive due to :	(A) The presence of Halogen Atom (B) The presence of Mg atom (C) The polarity of C - Mg bond (D) None of these	
(9)	The conversion of n-hexane into Benzene by heating in the presence of Pt is called :	(A) Isomerization (B) Aromatization (C) Dealkylation (D) Rearrangement	
(10)	Preparation of Vegetable Ghee Involves :	(A) Halogenation (B) Hydrogenation (C) Hydroxylation (D) Dehydrogenation	
(11)	The Linear Shape is associated with which set of Hybrid Orbitals :	(A) sp (B) sp <sup>2</sup> (C) sp <sup>3</sup> (D) dsp <sup>2</sup>	
(12)	f-block elements are also called :	(A) Non Typical Transition Elements (B) Outer Transition Elements (C) Normal Transition Elements (D) Inner Transition Elements	
(13)	Hydrogen Bond is the strongest between the Molecules of :	(A) HF (B) HCl (C) HBr (D) HI	
(14)	Oxidation of NO in air produces :	(A) N <sub>2</sub> O (B) N <sub>2</sub> O <sub>3</sub> (C) N <sub>2</sub> O <sub>4</sub> (D) N <sub>2</sub> O <sub>5</sub>	
(15)	Which of the following elements is not present abundantly in Earth's Crust :	(A) Silicon (B) Aluminium (C) Sodium (D) Oxygen	
(16)	The number of Elements classified by Newlands in the Periodic Table are :	(A) 38 (B) 62 (C) 92 (D) 85	
(17)	Oxides of Beryllium are :	(A) Acidic (B) Basic (C) Amphoteric (D) Neutral	





Roll No.	1072 - 16000	Inter ( Part II )	Session (2019 - 21) to (2021 - 23)
Chemistry (Subjective )	1st - A - Exam 2023	Group 2nd	Time 2 : 40 Hours Marks : 68

Note: It is compulsory to attempt any (8 - 8) Parts each from Q.No. 2 , Q.No.3 and attempt any (6) Parts from Q.No.4. Attempt any (3) Questions from Part - II .Write same Question No. and its Part No. as given in the Question Paper.

## Bahawalpur Board-2023

Make Diagram where necessary.

Part - I

22 x 2 = 44

Q.No.2	(i)	How will you convert Boric Acid into Borax and Vice Versa ?
	(ii)	Why is $\text{CO}_2$ a gas at room temperature while $\text{SiO}_2$ is a Solid ?
	(iii)	What are Semiconductors ? Give two examples.
	(iv)	Write two Electrophilic Substitution Reactions of Benzene.
	(v)	Prepare Benzene from Acetylene.
	(vi)	Draw the resonance structures of Benzene.
	(vii)	Differentiate between Thermoplastic and Thermosetting Polymers.
	(viii)	Write structures of Monomers of Epoxy Resins.
	(ix)	How are Proteins classified based on their functions ?
	(x)	Describe Hazards of Ozone as a Pollutant.
	(xi)	What do you mean by Biochemical Oxygen Demand (BOD) ?
	(xii)	Write the two harmful effects of Chlorination of Water.
Q.No.3	(i)	Write down names and formulas of any two Ores of Sulphur.
	(ii)	How is $\text{H}_2\text{SO}_4$ used to Dehydrate the Oxalic Acid and Glucose ?
	(iii)	How does Aqua Regia dissolve gold in it ?
	(iv)	What is Reforming ? Give its chemical equation.
	(v)	What are Alicyclic Compounds ? Draw structure of two compounds.
	(vi)	What is Markownikov's Rule ? Give one example.
	(vii)	Why are Alkenes more reactive than Alkanes ?
	(viii)	How will you prepare Chloroprene from Ethyne ?
	(ix)	Give two methods for preparation of Alkylhalides from Alcohol .
	(x)	What are $\text{S}_N2$ Reactions ? Give one example.
	(xi)	How is Diammonium Phosphate prepared ?
	(xii)	Write down names of any four Non - Woody Raw Materials for Paper.
Q.No.4	(i)	Under what conditions does Aluminium Corrode ?
	(ii)	What is meant by Chelates ?
	(iii)	Why are Transition Metals tough ?
	(iv)	How can we distinguish Ethanol and Methanol ?
	(v)	What is meant by Denaturing of Alcohol ?
	(vi)	How is Phenyl Acetate produced from Phenol ?
	(vii)	Write down any four uses of Acetaldehyde .
	(viii)	How can you distinguish Carbonyl Compounds from Non - Carbonyl Compounds ?
	(ix)	What is Zwitter ion ?

Part - II

3 x 8 = 24

Q.No.5	(a)	What are the Halides ? Write its types. Describe one of them in detail.	(4)
	(b)	What will happen when : (i) Lime is heated with coke (ii) Calcium Nitrate is heated (iii) Gypsum is heated (iv) Beryllium Oxide is treated with NaOH	(4)
Q.No.6	(a)	Explain Peculiar Behaviour of Fluorine.	(4)
	(b)	What is Role of Digestion Step in the manufacture of Paper Pulp ?	(4)
Q.No.7	(a)	Define $sp^3$ Hybridization. Explain formation of Ethane Molecule according to this approach.	(4)
	(b)	Describe the structure of Benzene on the basis of Atomic Orbital Treatment.	(4)
Q.No.8	(a)	Write down the mechanism of Kolbe's Electrolytic Method for the preparation of Ethane.	(4)
	(b)	Discuss $\text{S}_N1$ reactions in detail.	(4)
Q.No.9	(a)	What is Haloform Reaction ? How will you prepare Iodoform from : (a) Acetaldehyde (b) Acetone (c) Ethanol	(4)
	(b)	Write Mechanism for the formation of Ethyl Acetate from Ethyl Alcohol and	

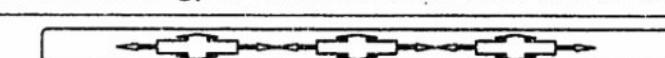


<b>Chemistry</b>	<b>(B)</b>	<b>L.K.No.1309</b>	<b>Paper Code No. 8483</b>
<b>Paper II</b>	<b>( Objective Type )</b>	<b>Inter - A - 2022</b>	<b>( Group 1st )</b>
<b>Time :</b>	<b>20 Minutes</b>	<b>Inter ( Part II )</b>	
<b>Marks :</b>	<b>17</b>	<b>Session (2018 - 20) to (2020 - 22)</b>	

**Note :** Four possible choices A, B, C, D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

### Bahawalpur Board-2022

<b>Q.No.1</b>	<b>The pH range of the Acid Rain is :</b>
(1)	(A) 7 – 6.5 (B) 6.5 – 6 (C) 6 – 5.6 (D) less than 5
(2)	<b>PeroxyacetylNitrate is an irritant to human beings and it affects :</b> (A) Eyes (B) Ears (C) Stomach (D) Nose
(3)	<b>Which three elements are needed for the healthy growth of plants</b> (A) N, S, P (B) N, Ca, P (C) N, P, K (D) N, K, C
(4)	<b>Which of these Polymers is an Addition Polymer :</b> (A) nylon – 6, 6 (B) Polystyrene (C) Terylene (D) Epoxy Resin
(5)	<b>Acetic Acid is manufactured by :</b> (A) Distillation (B) Fermentation (C) Ozonolysis (D) Esterification
(6)	<b>Which of the following will have the highest boiling point :</b> (A) Methanal (B) Ethanal (C) Propanal (D) 2 - Hexanone
(7)	<b>Which compound shows Hydrogen Bonding :</b> (A) C <sub>6</sub> H <sub>6</sub> (B) C <sub>2</sub> H <sub>5</sub> Cl (C) CH <sub>3</sub> – O – CH <sub>3</sub> (D) C <sub>2</sub> H <sub>5</sub> – OH
(8)	<b>In Primary Alkyl Halides, the Halogen Atom is attached to a Carbon which is further attached to how many Carbon Atoms :</b> (A) 2 (B) 3 (C) 1 (D) 4
(9)	<b>Benzene Molecule contains</b> (A) Three Double Bonds (B) Two Double Bonds (C) One Double Bond (D) Delocalized $\pi$ – electron charge
(10)	<b>Preparation of Vegetable Ghee Involves :</b> (A) Halogenation (B) Hydrogenation (C) Hydroxylation (D) Dehydrogenation
(11)	<b>The state of Hybridization of Carbon Atom in Methane is :</b> (A) sp <sup>3</sup> (B) sp (C) sp <sup>2</sup> (D) dsp <sup>2</sup>
(12)	<b>Which of the following is a non – typical transition element :</b> (A) Cr (B) Mn (C) Zn (D) Fe
(13)	<b>Which of the following Hydrogen Halide is the weakest acid in solution :</b> (A) HF (B) HBr (C) HI (D) HCl
(14)	<b>Out of all the elements of Group VA, the highest Ionization energy is possessed by :</b> (A) N (B) P (C) Sb (D) Bi
(15)	<b>Tincal is a mineral of :</b> (A) Al (B) B (C) Si (D) C
(16)	<b>Which one of the following is not an Alkali Metal</b> (A) Francium (B) Caesium (C) Rubidium (D) Radium
(17)	<b>Mark the correct statement :</b> (A) The Ionization Energy of Calcium is lower than that of Barium. (B) The Ionization Energy of Calcium is lower than that of Magnesium. (C) The Ionization Energy of Calcium is higher than that of Beryllium. (D) The Ionization Energy of Calcium is lower than that of Strontium.



# Bahawalpur Board-2022



Roll No.	1309 -15000	Inter ( Part II )	Session (2018 - 20) to (2020 - 22)
Chemistry (Subjective )	Inter - A - 2022	Time 2 : 40 Hours	Marks : 68 (Group 1st )

Note: It is compulsory to attempt any (8 - 8) Parts each from Q.No. 2 , Q.No.3 and attempt any (6) Parts from Q.No.4. Attempt any (3) Questions from Part - II .Write same Question No. and its Part No. as given in the Question Paper.

Make Diagram where necessary.

Part - I

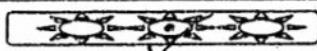
22 x 2 = 44

Q.No.2	(i)	Give two defects of Mendeleev's Periodic Table.
	(ii)	Why Negative Ion is larger than Parent Atom ?
	(iii)	Give the Chemistry of Borax Bed Text.
	(iv)	Why 2 % Gypsum is added in the Cement ?
	(v)	Give four uses of Borax.
	(vi)	What is Chemical Garden ?
	(vii)	Give the name and formula of two Oxides of Nitrogen.
	(viii)	Give reaction of <b>Zn</b> with <b>dil</b> and <b>conc.</b> <b>HNO<sub>3</sub></b>
	(ix)	What are Typical and Non - Typical Transition Elements ?
	(x)	Why Transition Metal show variable Oxidation State ?
	(xi)	What are the essential qualities of Good Fertilizer ?
	(xii)	Enlist non-woody raw material for the manufacturing of paper.
Q.No.3	(i)	How <b>XeF<sub>6</sub></b> reacts with : (a) <b>H<sub>2</sub>O</b> (b) <b>SiO<sub>2</sub></b>
	(ii)	What are Freons and Teflon ?
	(iii)	Explain how Octane number of Gasoline is improved by reforming ?
	(iv)	What is Knocking ? How can we reduce it ?
	(v)	How will you synthesize the following compounds starting from Ethyne : (a) Acetaldehyde (b) Methyl Nitrile
	(vi)	Convert Ethane to Ethyne.
	(vii)	Write a note on the Acidity of Ethyne.
	(viii)	How is Acetylene prepared on Industrial Scale ?
	(ix)	How will you convert $\text{CH}_3\text{COOH} \longleftrightarrow \text{CH}_3\text{CH}_2\text{COOH}$
	(x)	Define Iodine Number.
	(xi)	What are Steroids ? Draw the general structural formula of a Steroid.
	(xii)	Write down the structure of Cholesterol.
Q.No.4	(i)	Describe the Catalytic Oxidation of Benzene.
	(ii)	What information do we get from x - ray analysis of Benzene ?
	(iii)	Write down four uses of Ethanol .
	(iv)	How Ethers are prepared by Williamson's Synthesis ?
	(v)	Describe the reactivity of Carbonyl Functional Group .
	(vi)	How Alkanenitriles are prepared ? Convert them to Carboxylic Acid.
	(vii)	What are essential and non - essential Amino Acids ?
	(viii)	Name four components of Environment.
	(ix)	How Chlorofluorocarbons destroy the Ozone Layer ?

Part - II

3 x 8 = 24

Q.No.5	(a)	Explain similarities of Hydrogen with Halogens and dissimilarities with Alkali Metals.	(4)
	(b)	Write a note on Aluminium Silicate.	(4)
Q.No.6	(a)	What will happens when : (i) Lithium Carbonate is heated (ii) Lithium Hydroxide is heated (iii) Lithium reacts with Nitrogen (iv) Lithium burns in air	(4)
	(b)	Give two methods for the preparation of : (i) Potassium Chromate (ii) Potassium Dichromate	(4)
Q.No.7	(a)	Define Functional Group. Write names of three functional groups that have Nitrogen Atom.	(4)
	(b)	How does Ethyl Magnesium Bromide react with followings : (i) $\text{CO}_2$ (ii) $\text{H}_2\text{O}$ (iii) $\text{CH}_3\text{CHO}$ (iv) Cyanogen Chloride	(4)
Q.No.8	(a)	Describe the Kolbe's Electrolytic Method for the preparation of Ethyne.	(4)
	(b)	What is Cannizzaro's Reaction ? Give its mechanism.	(4)
Q.No.9	(a)	What are Symmetrical and Non - Symmetrical Ethers ? Give any two preparation reactions of Ethers.	(4)
	(b)	Give the reaction Mechanism of Friedel - Craft : (i) Alkylation (ii) Acylation	(4)



## Bahawalpur Board-2022



<b>Chemistry</b>	<b>(D)</b>	<b>L.K.No.1310</b>	<b>Paper Code No. 8488</b>
<b>Paper II</b>	<b>( Objective Type )</b>	<b>Inter - A - 2022</b>	<b>( Group 2nd )</b>
<b>Time :</b>	<b>20 Minutes</b>	<b>Inter ( Part II )</b>	
<b>Marks :</b>	<b>17</b>	<b>Session (2018 - 20) to (2020 - 22)</b>	

**Note :** Four possible choices A , B , C , D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

<b>Q.No.1</b>	<b>Keeping in view the size of Atoms , which order is the correct one :</b>
(1)	(A) Mg > Sr (B) Ba > Mg (C) Lu > Ce (D) Cl > I
(2)	<b>Laughing Gas is chemically :</b> (A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>4</sub>
(3)	<b>Which metal is used in the Thermite process because of reactivity :</b> (A) Iron (B) Copper (C) Aluminium (D) Zinc
(4)	<b>Which one of the following does not belong to Alkaline Earth Metals :</b> (A) Be (B) Ra (C) Ba (D) Rn
(5)	<b>Hydrogen Bond is strongest between the Molecules of :</b> (A) HF (B) HCl (C) HBr (D) HI
(6)	<b>Formula of Chloroform is :</b> (A) CH <sub>3</sub> Cl (B) CCl <sub>4</sub> (C) CH <sub>2</sub> Cl <sub>2</sub> (D) CHCl <sub>3</sub>
(7)	<b>Which set of Hybrid Orbitals has planar triangular shape :</b> (A) sp <sup>3</sup> (B) sp (C) sp <sup>2</sup> (D) dsp <sup>2</sup>
(8)	<b>Which of the given is a typical transition metal :</b> (A) Sc (B) Y (C) Ra (D) Co
(9)	<b>Which of the following Acid can be used as a Catalyst in Friedel – Crafts reactions :</b> (A) AlCl <sub>3</sub> (B) HNO <sub>3</sub> (C) BeCl <sub>2</sub> (D) NaCl
(10)	<b>Cannizaro's Reaction is not given by :</b> (A) Formaldehyde (B) Acetaldehyde (C) Benzaldehyde (D) Trimethyl Acetaldehyde
(11)	<b>Which compound is more soluble in water :</b> (A) C <sub>2</sub> H <sub>5</sub> OH (B) C <sub>6</sub> H <sub>5</sub> OH (C) CH <sub>3</sub> COCH <sub>3</sub> (D) n - Hexanol
(12)	<b>Elimination Bimolecular Reactions involves :</b> (A) First Order Kinetics (B) Second Order Kinetics (C) Third Order Kinetics (D) Zero Order Kinetics
(13)	<b>Which Acid is used in the manufacture of Synthetic Fibre :</b> (A) Formic Acid (B) Oxalic Acid (C) Carbonic Acid (D) Acetic Acid
(14)	<b>Ozone Layer is present in range of :</b> (A) 0 --- 5 Km (B) 10 --- 15 Km (C) 15 – 25 Km (D) 25 – 28 Km
(15)	<b>Phosphorus helps the growth of :</b> (A) Root (B) Leaves (C) Stem (D) Seed
(16)	<b>The Fibre which is made from Acrylonitrile as monomer :</b> (A) PVC (B) Rayon Fibre (C) Acrylic Fibre (D) Polyester Fibre
(17)	<b>Major source of Acid Deposition in atmosphere is :</b> (A) SO (B) SO <sub>2</sub> (C) SO <sub>3</sub> (D) N <sub>2</sub>

Note: It is compulsory to attempt any (8 - 8) Parts each from Q.No. 2 , Q.No.3 and attempt any (6) Parts from Q.No.4. Attempt any (3) Questions from Part - II .Write same Question No. and its Part No. as given in the Question Paper.

### Bahawalpur Board-2022

Make Diagram where necessary.

Part - I

22 x 2 = 44

Q.No.2	(i)	The Hydration Energies of the Ions are in the given order : $Al^{3+} > Mg^{2+} > Na^+$ give reason.
	(ii)	Ionic Character of Halides decreases from left to right in a period, comment.
	(iii)	Why is the Aqueous Solution of $Na_2CO_3$ Alkaline in nature ?
	(iv)	Give decomposition reaction of Lithium Carbonate and Lithium Nitrate.
	(v)	Give the Chemistry of Borax Bead Text.
	(vi)	How does Orthoboric Acid react with : (a) Sodium Hydroxide (b) Ethyl Alcohol
	(vii)	How does Nitrogen differ from other elements of its group ?
	(viii)	Write any four uses of Sulphuric Acid.
	(ix)	Write down any two uses of $KMnO_4$
	(x)	Define Paramagnetism and Diamagnetism.
	(xi)	What are Nitrogenous Fertilizers ? Give one example
	(xii)	Write down any four Calcarious material used for manufacture of Cement.
Q.No.3	(i)	What are Freons ? Write down their uses.
	(ii)	Write down the names and formulas of two Oxyacids of Chlorine.
	(iii)	Define Functional Group. Write name of functional group present in Aldehydes.
	(iv)	Why there is a no free rotation around a Carbon - Carbon Double Bond ?
	(v)	Why are Alkanes called Paraffins ?
	(vi)	What is Mustard Gas ? How it can be prepared ?
	(vii)	How is Acetylene prepared on Industrial Scale ?
	(viii)	How will you convert Ethyl Bromide into : (a) Ethylamine (b) Ethyl Acetate
	(ix)	Grignard reagent is considered as the most reactive compound. Justify it.
	(x)	Define Saponification. Give an example.
	(xi)	What is Acid Number ?
	(xii)	What are Trisaccharides ? Give an example.
Q.No.4	(i)	Write down the mechanism of Sulphonation of Benzene.
	(ii)	Write any four Ortho - para Directing Groups.
	(iii)	Ethyl Alcohol is liquid while Methyl Chloride is Gas . Give reason.
	(iv)	Why Absolute Alcohol can not be prepared by Fermentation Process ?
	(v)	What is Silver Mirror Test ?
	(vi)	What are Essential and Non - Essential Amino Acids ?
	(vii)	Give reaction of Acetic Acid with HI and $SOCl_2$ .
	(viii)	Write down four harmful effects of Acid Rain.
	(ix)	Define Biochemical Oxygen Demand ( BOD ).

Part - II

3 x 8 = 24

Q.No.5	(a)	Discuss four blocks in Modern Periodic Table.	(4)
	(b)	What are Silicones ? How are they produced ? Give properties.	(4)
Q.No.6	(a)	Mention the problems faced during the preparation of NaOH by diaphragm cell . Also give their solution.	(4)
	(b)	Briefly explain the given terms by giving example : (a) Chelates (b) Ligands	(4)
Q.No.7	(a)	Define Hybridization. Explain $sp^3$ Hybridization.	(4)
	(b)	Write any four methods of preparation of Alkylhalides.	(4)
Q.No.8	(a)	Describe the Kolbe's Electrolytic Method for the preparation of Alkanes along with mechanism.	(4)
	(b)	Explain Aldol Condensation reaction with the help of mechanism of Acetaldehyde.	(4)
Q.No.9	(a)	How Benzene can be prepared from : (i) Cyclohexane (ii) n - Hexane (iii) Sodium Benzoate (iv) Phenol	(4)
	(b)	Write a note on Acidic behaviour of Phenol .	(4)



Q.No.1		Mark the correct statement :	
(1)		(A) All Lanthanides are present in the same group. (B) All Halogens are present in the same period. (C) All the Alkali Metals are present in the same group. (D) All the Noble Gases are present in the same period.	
(2)		Laughing Gas is chemically :	(A) NO (B) N <sub>2</sub> O (C) NO <sub>2</sub> (D) N <sub>2</sub> O <sub>4</sub>
(3)		Which Element forms an Ion with charge + 3 :	(A) Beryllium (B) Aluminium (C) Carbon (D) Silicon
(4)		Which of the following Sulphate is not soluble in water :	(A) Sodium Sulphate (B) Potassium Sulphate (C) Zinc Sulphate (D) Barium Sulphate
(5)		Chlorine Heptaoxide (Cl <sub>2</sub> O <sub>7</sub> ) reacts with water to form	(A) Hypochlorous Acid (B) Chloric Acid (C) Perchloric Acid (D) Chlorine and Oxygen
(6)		The State of Hybridization of Carbon Atom in Methane is :	(A) sp <sup>3</sup> (B) sp <sup>2</sup> (C) sp (D) dsp <sup>2</sup>
(7)		Which of the given is a typical transition metal :	(A) Sc (B) Y (C) Ra (D) Co
(8)		Which one is Chlorous Acid :	(A) HClO (B) HClO <sub>2</sub> (C) HClO <sub>3</sub> (D) HClO <sub>4</sub>
(9)		Vinyl acetylene combines with HCl to form :	(A) Polyacetylene (B) Benzene (C) Chloroprene (D) Divinyl Acetylene
(10)		Which Compound is called Universal Solvent :	(A) H <sub>2</sub> O (B) CH <sub>3</sub> OH (C) C <sub>2</sub> H <sub>5</sub> OH (D) CH <sub>3</sub> – O – CH <sub>3</sub>
(11)		For which Mechanisms, the first step involved is the same :	(A) E1 and E2 (B) E2 and S <sub>N</sub> 2 (C) S <sub>N</sub> 1 and E2 (D) E1 and S <sub>N</sub> 1
(12)		Amongst the following, the compound that can be most readily Sulphonated is :	(A) Toluene (B) Benzene (C) Nitrobenzene (D) Chlorobenzene
(13)		Acetone reacts with HCN to form a Cyanohydrin. It is an example of :	(A) Electrophilic Addition (B) Electrophilic Substitution (C) Nucleophilic Addition (D) Nucleophilic Substitution
(14)		The flavour of Octylacetate is :	(A) Orange (B) Apricot (C) Banana (D) Jasmine
(15)		Micro Nutrients are required in quantity ranging from :	(A) 4 – 40 g (B) 6 – 200 g (C) 6 – 200 Kg (D) 4 – 40 Kg
(16)		Aldol Condensation is given by :	(A) Acetaldehyde (B) Formaldehyde (C) Benzaldehyde (D) Trimethyl Acetaldehyde
(17)		The solution of which Acid is used for seasoning of food :	(A) Formic Acid (B) Acetic Acid (C) Benzoic Acid (D) Butanoic Acid

# Bahawalpur Board-2021



Roll No.	1309 - 18000	Session (2017-19) to (2020-22)	Inter (Part - II)
Chemistry (Subjective)	Inter - A - 2021	Time 2 : 40 Hours Marks : 68	Group 1st

22 x 2 = 44

Q.No.2	(i)	Write essential features of 4 <sup>th</sup> and 5 <sup>th</sup> Period in Periodic Table.
	(ii)	Describe some families in Periodic Table.
	(iii)	Write the Chemical Formulae of : (a) Calcite (b) Barite
	(iv)	Why is the Aqueous Solution of $\text{Na}_2\text{CO}_3$ is Alkaline in Nature?
	(v)	Write the Chemical Formulae of : (a) Corundum (b) Cryolite
	(vi)	Write two methods for preparation of Borax.
	(vii)	Write the chemistry of Borax Bead Test.
	(viii)	Describe the properties of White Phosphorus.
	(ix)	Complete and Balance the Equations : (a) $\text{Cu} + \text{H}_2\text{SO}_4$ (conc) $\longrightarrow$ (b) $\text{Zn} + \text{H}_2\text{SO}_4$ (dil) $\longrightarrow$
	(x)	Write the name and uses of Micronutrients used in Growth of Plants.
	(xi)	What is the function of Nitrogenous Fertilizers for the Growth of Plants ?
	(xii)	Write any four essential features of Good Fertilizers.
Q.No.3	(i)	Write four factors on which Oxidizing Behaviour of Halogens depend.
	(ii)	Why is HF weaker acid than other Halogen Acids ?
	(iii)	Write down four uses of Bleaching Powder.
	(iv)	What are Interstitial Compounds?
	(v)	Why does Damaged Tin Plated Iron get rusted quickly?
	(vi)	Write down mechanism for Nitration of Benzene
	(vii)	Write down resonance contributing structures for Benzene.
	(viii)	Write equations for the reactions of Acetaldehyde with : (a) $\text{NaHSO}_3$ (b) HCN
	(ix)	Write down general mechanism for Acid Catalysed Nucleophilic addition reaction of Carbonyl Compounds.
	(x)	Write down four uses of Acetic Acid.
	(xi)	What are Fatty Acids ? Give their two examples.
	(xii)	Convert Acetic Acid into : (a) Ethyl Alcohol (b) Ethane
Q.No.4	(i)	Why there is no free rotation around a Carbon – Carbon Double Bond ?
	(ii)	What is meant by a Functional Group ? Give the general formula of Functional Group of Mercaptanes and Nitriles.
	(iii)	How will you convert : (a) Acetic Acid to Ethane (b) Methane to Ethane
	(iv)	Name the following compounds by IUPAC System : (a) $\text{CH}_2 = \text{CH} - \text{C} \equiv \text{C} - \text{CH} = \text{CH}_2$ (b) $\text{CH} \equiv \text{C} - \text{CH} = \text{CH} - \text{C} \equiv \text{CH}$
	(v)	Write down Chemical Equations for the preparation of Propene from : (a) n - Propyl Alcohol (b) iso - Propyl Chloride
	(vi)	How Tetramethyl Lead and Tetraethyl Lead are prepared?
	(vii)	Describe Wurtz Synthesis for the preparation of Alky Halides.
	(viii)	What is the action of given on Phenol : (a) $\text{HNO}_3$ (b) Zn (dust)
	(ix)	Why the boiling points of Alcohols are higher than Corresponding Alkanes?

## Part - II



Q.No.5	(a)	Define Electron Affinity. Discuss its trends in Periodic Table.	(4)
	(b)	Explain preparation of Sodium by Down's Cell.	(4)
Q.No.6	(a)	Discuss reactions of Sulphuric Acid as a Dehydrating Agent.	(4)
	(b)	Define Corrosion. How Electrochemical Theory explains Corrosion?	(4)
Q.No.7	(a)	Define sp Hybridization. Explain the structure of Ethyne on the basis of sp - Hybridization.	(4)
	(b)	How will you identify Carbonyl Compounds ( Aldehyde and Ketones ) using any four reactions ?	(4)
Q.No.8	(a)	How will you prepare Acetylene from : (i) Vicinal Dihalide (ii) Tetrahalide	(4)
	(b)	What is $\beta$ - Elimination Reaction ? Explain $\text{E}_1$ reaction in detail.	(4)

# Bahawalpur Board-2021

Chemistry

(A)

L.K.No. 1310

Paper Code No. 8482

Q.No.1	Which statement is incorrect :
(1)	(A) All the metals are good conductor of electricity. (B) All the metals are good conductor of heat. (C) All the metals form positive ions. (D) All the metals form Acidic Oxides.
(2)	Chile Saltpetre has the chemical formula :  (A) $\text{NaNO}_3$ (B) $\text{KNO}_3$ (C) $\text{Na}_2\text{B}_4\text{O}_7$ (D) $\text{Na}_2\text{CO}_3\text{H}_2\text{O}$
(3)	Tincal is mineral of :  (A) Al (B) B (C) Si (D) C
(4)	Laughing Gas is chemically :  (A) $\text{NO}$ (B) $\text{N}_2\text{O}$ (C) $\text{NO}_2$ (D) $\text{N}_2\text{O}_4$
(5)	Bleaching Powder may be produced by passing Chlorine over :   (A) Calcium Carbonate (B) Hydrated Calcium Sulphate (C) Anhydrous Calcium Sulphate (D) Calcium Hydroxide
(6)	The Bond Angle in $\text{OF}_2$ molecule is :  (A) $105^\circ$ (B) $106^\circ$ (C) $107^\circ$ (D) $108^\circ$
(7)	The strength of binding energy of transition elements depends upon :  (A) Number of Electron Pairs (B) Number of Unpaired Electrons (C) Number of Neutrons (D) Number of Protons
(8)	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
(9)	Vinyl Acetylene combines with $\text{HCl}$ to form :  (A) Polyacetylene (B) Benzene (C) Chloroprene (D) Divinyl Acetylene
(10)	Amongst the following, the compound that can be most readily Sulphonated is :  (A) Toluene (B) Benzene (C) Nitrobenzene (D) Chlorobenzene
(11)	For which Mechanisms, the first step involved is the same :  (A) $\text{E}1$ and $\text{E}2$ (B) $\text{E}2$ and $\text{S}N2$ (C) $\text{S}N1$ and $\text{E}2$ (D) $\text{E}1$ and $\text{S}N1$
(12)	Which 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) $\text{CH}_3 - \text{O} - \text{CH}_3$
(13)	Cannizzaro's Reaction is not given by :  (A) Formaldehyde (B) Acetaldehyde (C) Benzaldehyde (D) Trimethyl Acetaldehyde
(14)	Which of the following reagents will react with both Aldehydes and Ketones :  (A) Grignard Reagents (B) Tollen's Reagents (C) Fehling's Reagents (D) Benedict's Reagents
(15)	The solution of which Acid is used for seasoning of food :  (A) Formic Acid (B) Acetic Acid (C) Benzoic Acid (D) Butanoic Acid
(16)	Which one of these is the formula of Palmitic Acid :  (A) $\text{C}_{15}\text{H}_{31}\text{COOH}$ (B) $\text{C}_{16}\text{H}_{31}\text{COOH}$ (C) $\text{C}_{17}\text{H}_{35}\text{COOH}$ (D) $\text{C}_{18}\text{H}_{37}\text{COOH}$
(17)	Which is not a Calcarious Material : (A) Lime (B) Clay (C) Marble (D) Marine Shell

# Bahawalpur Board-2021



Roll No.	1310 - 18000	Session (2017 -19 ) to (2020 - 22)	Inter (Part - II )
Chemistry (Subjective)	Inter - A - 2021	Time 2 : 40 Hours Marks : 68	Group 2nd

$$12 \times 2 = 44$$

Q.No.2	(i)	What are Periods and Groups?
	(ii)	Define Electron Affinity. How does it vary in Periodic Table?
	(iii)	Write down chemical composition of : (a) Dolomite (b) Gypsum
	(iv)	Complete the given equations : (a) $\text{NaNO}_3 \xrightarrow{\Delta}$ (b) $\text{Be} + \text{NaOH} \longrightarrow$
	(v)	Write uses of Boric Acid.
	(vi)	Write two methods for the preparation of Borax.
	(vii)	Write down chemistry of Borax Bead Test.
	(viii)	$\text{HNO}_2$ acts as Oxidizing as well as reducing agent. Give one reaction in each case.
	(ix)	What is Aqua Regia? How does it dissolve gold?
	(x)	What are Micronutrients?
	(xi)	Write four characteristics of a good fertilizer.
	(xii)	Name two Calcareous and two Argilaceous raw materials for cement.
Q.No.3	(i)	How Iodine Pentoxide ( $\text{I}_2\text{O}_5$ ) is prepared? Give its reaction with Carbon Monoxide ( CO ).
	(ii)	Mention the factors upon which the Oxidizing Power of Halogens depends upon?
	(iii)	Write down four physical properties of $\text{HClO}_4$ .
	(iv)	What is the cause of Colour of Transition Element Compounds?
	(v)	Define Paramagnetism and Diamagnetism.
	(vi)	Draw the Structural Formulas for : (a) 2, 4, 6 - Trinitrotoluene (b) p - Hydroxybenzoic Acid
	(vii)	How Aromatic Hydrocarbons are classified?
	(viii)	How will you convert : (a) Ethyne into Ethanal (b) Ethanol into 2 - Butanone
	(ix)	Give four uses of Acetaldehyde.
	(x)	Give four uses of Acetic Acid.
	(xi)	How Acetic Acid is prepared from Acetylene?
	(xii)	Give reactions of Acetic Acid with : (a) $\text{Na}_2\text{CO}_3$ (b) $\text{NaHCO}_3$
Q.No.4	(i)	What are Heterocyclic Compounds? Give one example.
	(ii)	Define Cis - Trans Isomerism. Give one example.
	(iii)	Give two physical properties of Alkanes.
	(iv)	Discuss Catalytic Oxidation of Methane.
	(v)	What is Hydroxylation? Give one example.
	(vi)	Define Nucleophile. Give two examples.
	(vii)	Give two properties of $\text{E}_2$ reactions.
	(viii)	Define Fermentation. What are its conditions?
	(ix)	"Lower Alcohols are readily soluble in water". Justify.

## Part - II

Q.No.5	(a)	Write down two similarities and two dissimilarities of Hydrogen with Halogens.	(4)
	(b)	Briefly describe the extraction of Sodium by Down's Cell.	(4)
Q.No.6	(a)	Describe manufacture of Nitric Acid by Birkeland and Eyde's Process.	(4)
	(b)	Write note on : (i) Tin Plating (ii) Zinc Coating	(4)
Q.No.7	(a)	Define Four Types of Isomerism with one example each.	(4)
	(b)	Explain with Mechanism the addition of Sodium Bisulphite to Acetone. What is the utility of this reaction?	(4)
Q.No.8	(a)	Give Polymerization Reactions of Ethyne to Prepare : (i) Divinyl Acetylene (ii) Synthetic Rubber (iii) Benzene	(4)
	(b)	What are $\beta$ - elimination Reactions? Differentiate between $\text{E}_1$ and $\text{E}_2$ reactions.	(4)
Q.No.9	(a)	Explain Alkylation and Acylation of Benzene with Mechanism.	(4)
	(b)	How the following compound can be prepared from phenol : (i) Bakelite (ii) Picric Acid (iii) Phenylacetate	(4)



Note : Four possible choices A, B, C, D to each question are given. Which choice 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.

Q.No.1	Boric Acid can not be used :			
(1)	(A) As Antiseptic in Medicines (B) For Washing Eyes (C) In Soda Bottles (D) For Enamels and Glazes			
(2)	Which statement is incorrect :			
	(A) All the metals are good conductor of electricity (B) All the metals are good conductor of heat			
	(C) All the metals forms positive ions (D) All the metals form Acidic Oxides			
(3)	Which of the following Sulphates is not soluble in water :			
	(A) Sodium Sulphate (B) Potassium Sulphate (C) Zinc Sulphate (D) Barium Sulphate			
(4)	Laughing Gas is chemically :	(A) NO	(B) N <sub>2</sub> O	(C) NO <sub>2</sub>
		(D) N <sub>2</sub> O <sub>4</sub>		
(5)	The Anhydride of HClO <sub>4</sub> is :	(A) ClO <sub>3</sub>	(B) ClO <sub>2</sub>	(C) Cl <sub>2</sub> O <sub>5</sub>
		(D) Cl <sub>2</sub> O <sub>7</sub>		
(6)	The Strength of Binding Energy of Transition Elements depend upon :			
	(A) Number of Electron Pairs (B) Number of Unpaired Electrons			
	(C) Number of Neutrons (D) Number of Protons			
(7)	A Double Bond consist of : (A) Two Sigma Bonds (B) One Sigma and One Pi Bond			
	(C) Two Pi Bonds (D) One Sigma and Two Pi Bonds			
(8)	Formula of Chloroform is :	(A) CH <sub>3</sub> Cl	(B) CCl <sub>4</sub>	(C) CH <sub>2</sub> Cl <sub>2</sub>
		(D) CHCl <sub>3</sub>		
(9)	The Electrophile in Aromatic Sulphonation is :			
	(A) H <sub>2</sub> SO <sub>4</sub>	(B) HSO <sub>4</sub>	(C) SO <sub>3</sub>	(D) SO <sub>3</sub> <sup>+</sup>
(10)	For which mechanisms, the first step involved is the same :			
	(A) E1 and E2 (B) E2 and S <sub>N</sub> 2	(C) S <sub>N</sub> 1 and E2	(D) E1 and S <sub>N</sub> 1	
(11)	Rectified Spirit contains Methyl Alcohol about :	(A) 80 %	(B) 85 %	(C) 90 %
		(D) 95 %		
(12)	Which of the following will have highest Boiling Point :			
	(A) Methanal	(B) Ethanal	(C) Propanal	(D) 2 - Hexanone
(13)	Which of the following Derivatives can not be prepared directly from Acetic Acid :			
	(A) Acetamide	(B) Acetyl Chloride	(C) Aceticanhydride	(D) Ethyl Acetate
(14)	Vegetable Oils are :	(A) Unsaturated Fatty Acids	(B) Glycerides of Unsaturated Fatty Acids	
		(C) Glycerides of Saturated Fatty Acids	(D) Essential Oils obtained from Plants	
(15)	Which is not a Calcarious Material :	(A) Lime	(B) Clay	(C) Marble
		(D) Marine Shell		
(16)	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)
(17)	The pH range of Acid Rain is :	(A) 7 --- 6.5	(B) 6.5 --- 6	(C) 6 --- 5.6
		(D) Less than 5		



Roll No. (Group Ist)	915 - 2000	Session (2015 - 2017) to (2016 - 2018)	Inter (Part - II -)
Chemistry (Subjective)	Inter - A -2018	Time : 2:40 Hours Marks : 68	New Pattern

Note: It is compulsory to attempt any (8 - 8) parts each from Q.No.2 and Q.No.3 and attempt any (6) parts from Q. No.4 . Attempt any (03) questions from Part II Write same Question No. and its Part No. as given in the question paper.

Make diagram where necessary.

Part - I

Bahawalpur Board-2018  $22 \times 2 = 44$

Q.No.2 (i) Negative Ion is always bigger in size than its Parent Atom, why?

(ii) What is the role of Shielding Effect on Ionization Energy?

(iii) BeO is amphoteric in nature. Justify.

(iv) Write two uses of Boric Acid.

(v) How does Aluminium react with : (a) NaOH (b)  $H_2SO_4$

(vi) Why are Liquid Silicones preferred over Ordinary Organic Lubricants?

(vii) How does  $P_2O_5$  react with Water in Cold State and Hot State?

(viii) Write formulae of given Ores : (a) Copper Pyrites (b) Galena

(ix) How does Conc.  $HNO_3$  react with : (a) Cu (b)  $H_2S$

(x) How Detergents Pollute Water?

(xi) Write names of two Primary and two Secondary Pollutants.

(xii) What are Alicyclic Compounds? Give two examples.

Q.No.3 (i) How Chromate Ions are converted into Dichromate ions?

(ii) What do you mean by Co-ordination Number and Co-ordination Sphere?

(iii) State Markownikov's Rule with a suitable example.

(iv) Why Alkynes are slightly Acidic in nature? Justify with an example.

(v) What are the main points given by Kekulé for structure of Benzene?

(vi) The order of reactivity of Alkylhalides is : R --- I > R --- Br > R --- Cl > R --- F  
Explain with reason.

(vii) Absolute Alcohol can not be prepared by Fermentation Process, why?

(viii) What is Williamson's Synthesis for Ether Preparation?

(ix) Why Formal Dehyde does not show Aldol Condensation?

(x) What is Iodoform Test? Give two uses of it.

(xi) What do you mean by Zwitter Ion? Draw its structure.

(xii) Differentiate between Acidic Amino Acids and Basic Amino Acids.

Q.No.4 (i) In what ways, fats and oils are different? Give an example.

(ii) What are important sources of fats and oils?

(iii) How Enzymatic Reactions are affected by change of temperature?

(iv) What are Essential Nutrients? Why are they needed for Plant Growth?

(v) What are essential Non-Woody Raw Materials used in the production of Paper in Pakistan?

(vi) How  $NH_3$  is given to the Plants? Give its composition.

(vii) What is Iodized Salt?

(viii) Give at least four applications of Noble Gases.

(ix) Complete the following reactions :



Part - II

Q.No.5 (a) Define Electron Affinity with an example. Why Second and Higher Electron Affinities are with positive sign? Justify your answer with suitable example. (4)

(b) What is the role of Gypsum in Agriculture? (4)

Q.No.6 (a) Describe the manufacture of Wrought Iron from Cast Iron. (4)

(b) What is Acid Rain? Write its causes and how does it affect our Environment. (4)

Q.No.7 (a) What is Orbital Hybridization? Explain the structure of Ethane on the basis of  $sp^3$  Hybridization. (4)

(b) Write two commercial and two laboratory methods of preparation of Benzene. (4)

Q.No.8 (a) Prepare Ethane and Ethene by Kolbe's Electrolytic Method with their Mechanisms. (4)

(b) How will you prepare  $C_2H_5OH$  from : (a) Molasses (b) Starch (4)

Q.No.9 (a) Write a detailed note on  $S_N2$  reactions of Alkylhalides. (4)

(b) Define Aldol. Discuss Aldol Condensation with mechanism. (4)



Note : Four possible choices A, B, C, D to each question are given. Which choice 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.

Q.No.1	Mark the Correct Statement :
(1)	(A) $\text{Na}^+$ is smaller than Na Atom (B) $\text{Na}^+$ is larger than Na Atom (C) $\text{Cl}^{-1}$ is smaller than Cl Atom (D) $\text{Cl}^{-1}$ (ion) and Cl (atom) are equal in size.
(2)	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) $\text{Ag}_2\text{O}$
(3)	Aluminium Oxide is : (A) Acidic (B) Basic (C) Neutral (D) Amphoteric
(4)	Which of the following Sulphate is not Soluble in water : (A) Sodium Sulphate (B) Potassium Sulphate (C) Zinc Sulphate (D) Barium Sulphate
(5)	The Anhydride of $\text{HClO}_4$ is : (A) $\text{ClO}_3$ (B) $\text{ClO}_2$ (C) $\text{Cl}_2\text{O}_5$ (D) $\text{Cl}_2\text{O}_7$
(6)	Vinyl Acetylene Combines with HCl to form : (A) Polyacetylene (B) Benzene (C) Chloroprene (D) Divinyl Acetylene
(7)	Which set of Hybrid Orbital has Triangular Shape : (A) $\text{Sp}^3$ (B) $\text{Sp}^2$ (C) Sp (D) $\text{dSp}^2$
(8)	The Strength of the Binding Energy of Transition Elements depends upon : (A) Number of Electron Pairs (B) Number of Unpaired Electrons (C) Number of Neutrons (D) Number of Protons
(9)	The Electrophile in Aromatic Sulphonation is : (A) $\text{H}_2\text{SO}_4$ (B) $\text{HSO}_4$ (C) $\text{SO}_3$ (D) $\text{SO}_3^+$
(10)	The Carbon Atom of Carbonyl Group is : (A) Sp Hybridized (B) $\text{Sp}^2$ Hybridized (C) $\text{Sp}^3$ Hybridized (D) $\text{dSp}^2$ Hybridized
(11)	Which compound is called a Universal Solvent : (A) $\text{H}_2\text{O}$ (B) $\text{CH}_3\text{-O-CH}_3$ (C) $\text{C}_2\text{H}_5\text{OH}$ (D) $\text{CH}_3\text{OH}$
(12)	Elimination Bimolecular Reactions involve : (A) Zero Order Kinetics (B) First Order Kinetics (C) Third Order Kinetics (D) Second Order Kinetics
(13)	Which is a Neutral Amino Acid : (A) Lysine (B) Histidine (C) Glycine (D) Glutamic Acid
(14)	Ecosystem is a smaller unit of : (A) Biosphere (B) Lithosphere (C) Hydrosphere (D) Atmosphere
(15)	Phosphorus helps the growth of : (A) Root (B) Leave (C) Stem (D) Seed
(16)	Which of these Polymers is a Synthetic Polymer : (A) Animal Fat (B) Starch (C) Cellulose (D) Polyester
(17)	In Purification of Potable Water the Coagulant used is : (A) Nickel Sulphate (B) Alum (C) Barium Sulphate (D) Copper Sulphate





Roll No. (Group 2nd)	916 - 6000 <sup>+600</sup>	Session (2015 - 2017) to (2016 - 2018)	Inter (Part - II)
Chemistry (Subjective)	Inter - A -2018	Time : 2:40 Hours Marks : 68	New Pattern

Note: It is compulsory to attempt any (8 - 8) parts each from Q.No.2 and Q.No.3 and attempt any (6) parts from Q. No.4 . Attempt any (03) questions from Part II Write same Question No. and its Part No. as given in the question paper.

Make diagram where necessary.

Part - I

Bahawalpur Board-2018

22 x 2 = 44

Q.No.2 (i) Why the Second Value of Electron Affinity of an element is usually shown with a positive sign?



(ii) What are Amphoteric Oxides? Give two examples.

(iii) Why 2% Gypsum is added in grinding during the process of manufacturing of Cement?

(iv) What is the effect of Heat on Boric Acid?

(v) Write any two points of importance of Oxides of Lead in Paints.

(vi) Write down formulae of : (a) Litharge (b) Red Lead

(vii) Write two points of differences between Red and White Phosphorus.

(viii) Write two reactions to show that  $H_2SO_4$  acts as Oxidizing Agent.

(ix) How does  $P_2O_3$  react with Water in Cold State and Hot State?

(x) What is meant by Hydrosphere? Give two examples of its sources.

(xi) Write down the conditions which are required for the formation of Smog.

(xii) Define Geometric Isomerism with a suitable example.

Q.No.3 (i) Why does damaged Tin Plated Iron get rusted quickly?

(ii) What is meant by Sacrificial Corrosion?

(iii) What is Baeyer's Test? Explain it giving an example.

(iv) Why does Alkynes are Less Reactive than Alkenes towards Electrophilic Reagents?

(v) What is General Pattern of Reactivity of Benzene towards an Electrophile?

(vi) Prepare following compounds from Ethyl Magnesium Bromide :

(a) Propanoic Acid (b) 1-Propanol

(vii) What are essential conditions for the fermentation process in order to prepare Ethanol?

(viii) What is meant by Denaturing of Alcohol and Wood Spirit?

(ix) What is Silver Mirror Test? Give an example.

(x) Give Iodoform Test to distinguish Ethanol from Methanol.

(xi) What is Zwitter Ion? Why it is called an Internal Salt?

(xii) What is Peptide Bond? Give formula of a Dipeptide.

Q.No.4 (i) What is Nylon 6,6? How is it prepared?

(ii) Differentiate between Fats and Oils.

(iii) Define Iodine Number.

(iv) What are essential Nutrient Elements? Why are these needed for Plant Growth?

(v) Discuss reactions taking place for setting of Cement in 1 to 7 days.

(vi) Write down two essential qualities of a good fertilizer.

(vii) Give chemical reactions of Chlorine with Cold Dilute and Hot Concentrated Solution of NaOH.

(viii) What is Teflon? Give its two uses.

(ix) What is Iodized Salt?

Part - II

Q.No.5 (a) Discuss Mendeleev's Periodic Law and give its advantages. (4)

(b) Describe the manufacture of Sodium Hydroxide by Diaphragm Cell. Diagram is not required. (4)

Q.No.6 (a) What are the main causes of Corrosion? Write two methods to prevent Corrosion. (4)

(b) What is Smog? Write three conditions for the formation of Smog. (4)

Q.No.7 (a) Write a note on Reforming of Petroleum. (4)

(b) Explain the structure of Benzene on the basis of Atomic Orbital Treatment. (4)

Q.No.8 (a) Prepare Ethane and Ethene by Kolbe's Electrolytic Method with their mechanisms. (4)

(b) How will you prepare  $C_6H_5OH$  by : (4)

(a) Dow's Method (b) Sodium Salt of Benzene Sulphonic Acid

Q.No.9 (a) Write a detailed note on  $S_N2$  reactions of Alkylhalides. (4)

(b) How does Acetaldehyde react with : (a)  $C_2H_5MgBr$  (b) HCN (c)  $NaHSO_3$  (d)  $NH_2OH$  (4)

Time :	20 Minutes	Inter ( Part II )	Group Ist
Marks :	17	Session (2015 -17) to (2017 - 19)	

Note : Four possible choices A , B , C , D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

### Bahawalpur Board-2019

Q.No.1	Mark the correct statement :
(1)	(A) $\text{Na}^+$ is smaller than Na atom (B) $\text{Na}^+$ is larger than Na atom. (C) $\text{Cl}^-$ is smaller than Cl atom (D) $\text{Cl}^-$ (ion) and Cl (atom) are equal in size
(2)	Which one of the following does not belong to Alkaline earth metals : (A) Be (B) Ra (C) Ba (D) Rn
(3)	Which metal is used in the Thermite Process because of its reactivity : (A) Iron (B) Copper (C) Aluminium (D) Zinc
(4)	Laughing Gas is chemically : (A) NO (B) $\text{N}_2\text{O}$ (C) $\text{NO}_2$ (D) $\text{N}_2\text{O}_4$
(5)	Which one of the given is the strongest Acid : (A) $\text{HClO}$ (B) $\text{HClO}_2$ (C) $\text{HClO}_3$ (D) $\text{HClO}_4$
(6)	Coordination Number of Pt in $[\text{PtCl}(\text{NO}_2)(\text{NH}_3)_4]\text{SO}_4$ is : (A) 2 (B) 4 (C) 1 (D) 6
(7)	The state of Hybridization of Carbon in Methane is : (A) $\text{Sp}^3$ (B) $\text{Sp}^2$ (C) Sp (D) $\text{dSp}^2$
(8)	Synthetic Rubber is made by Polymerization of : (A) Chloroform (B) Acetylene (C) Divinyl Acetylene (D) Chloroprene
(9)	During Nitration of Benzene, the active Nitrating agent is : (A) $\text{NO}_3$ (B) $\text{NO}_2^+$ (C) $\text{NO}_2^-$ (D) $\text{HNO}_3$
(10)	In Primary Alkyl Halides, the Halogen Atom is attached to a Carbon which is further attached to : (A) Two Carbon Atoms (B) Three Carbon Atoms (C) One Carbon Atom (D) Four Carbon Atoms
(11)	Which Compound is called a 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)	The Carbon of Carbonyl Group is : (A) Sp Hybridized (B) $\text{Sp}^2$ Hybridized (C) $\text{Sp}^3$ Hybridized (D) $\text{dSp}^2$ Hybridized
(13)	Which Reagent is used to reduce a Carboxylic Group to an Alcohol :  (A) $\text{H}_2 / \text{Ni}$ (B) $\text{H}_2 / \text{Pt}$ (C) $\text{NaBH}_4$ (D) $\text{LiAlH}_4$
(14)	Which of these Polymers is a Synthetic Polymer : (A) Animal Fat (B) Starch (C) Cellulose (D) Polyester
(15)	Which one of the following elements is present in all the proteins : (A) Cl (B) Cu (C) N (D) Al
(16)	Ammonium Nitrate fertilizer is not used for which crop : (A) Cotton (B) Wheat (C) Sugar (D) Paddy Rice
(17)	The main pollutant of Leather Tanneries in waste water is the salt of : (A) Lead (B) Chromium (VI) (C) Copper (D) Chromium (III)

Make Diagram where necessary.

Part - I

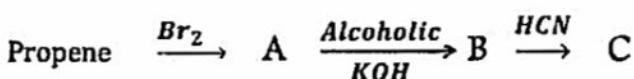
22 x 2 = 44

**Q.No.2**

- (i) The Oxidation States vary in a Period but remain almost constant in a group. Give reason.
- (ii) Ionic Character of Halides decreases from left to the right in a period. Give reason.
- (iii) What happened when : (i) Lithium Carbonate is Heated (b) Lithium Hydroxide is heated to red .
- (iv)  $\text{CO}_2$  is non-polar in nature. Explain.
- (v) Write formula of White Lead and write its one use.
- (vi) How and under what conditions does Aluminium react with Oxygen and Hydrogen ?
- (vii)  $\text{SO}_3$  is dissolved in  $\text{H}_2\text{SO}_4$  and not in hot water. Give reason.
- (viii) How does Nitrogen is different from other elements of its group?
- (ix) Give the advantage of Contact Process for the manufacture of  $\text{H}_2\text{SO}_4$ .
- (x) Define Cement.
- (xi) What is Prilling in Urea manufacturing?
- (xii) Oil Spillage affects the marine life. Justify.

**Q.No.3**

- (i) Describe the importance of Wohler's Work in the development of Organic Chemistry.
- (ii) Write down structural formula of product formed when 1-butene reacts with  $\text{Br}_2$  in  $\text{CCl}_4$ .
- (iii) Identify A, B and C in the following reaction :



- (iv) Give Products and necessary conditions for the following reactions :
  - (a) Phenol with Zn (b) Benzene with  $\text{SO}_3$
  - (v) How will you prepare P-Nitrochloro Benzene from Benzene?
  - (vi) Give four characteristics of  $\text{S}_{\text{N}}2$  reactions in Alkyl Halides .
  - (vii) Give reactions and conditions to convert Ethyl Bromide into : (a) Ethyl Alcohol (b) Ethyl Cyanide
  - (viii) What do you mean by Denaturing of Alcohol?
  - (ix) How will you distinguish between an Alcohol and a Phenol by a chemical reaction?
  - (x) Give the reactions of Acetic Acid with : (a)  $\text{NaOH}$  (b)  $\text{SOCl}_2$
  - (xi) Write the structural formulae of : (a) Oxalic Acid (b) Malonic Acid
  - (xii) Describe mechanism of reaction of Acetic Acid with Ammonia.

**Q.No.4**

- (i) What is Iodized Salt?
- (ii) Why has Iodine Metallic Luster?
- (iii) What are Disproportionation Reactions? Explain your answer with an example.
- (iv) Give systematic names to the given compounds : (a)  $\text{K}_2[\text{Cu}(\text{CN})_4]$  (b)  $[\text{Fe}(\text{CO})_5]$
- (v) Give four uses of Formaldehyde.
- (vi) How will you distinguish between Ethanal and Propanone?
- (vii) What are Derived Proteins? Give example.
- (viii) What is the basic difference between Starch and Cellulose?
- (ix) What are characters of Lipids?

Part - II

**Q.No.5**

- (a) What are Oxides? Describe various types of Oxides. (4)
- (b) How Sodium (Na) is prepared by Down's Cell Process? (4)

**Q.No.6**

- (a) How is Potassium Dichromate prepared ? Give its reaction with : (a)  $\text{FeSO}_4$  (b)  $\text{KI}$  (4)
- (b) What is Smog? Explain the pollutants which are main cause of smog. (4)

**Q.No.7**

- (a) Define  $\text{Sp}^2$  Hybridization and on its basis explain the structure of Ethene. (4)
- (b) How can you convert Benzene into :
  - (a) Cyclohexane (b) Maleic Anhydride (c) Glyoxal (d) Acetophenone

**Q.No.8**

- (a) How is Ethanol prepared from Molasses and Starch by Fermentation? (4)
- (b) Write down structural formula of the products formed when : 1-Butene reacts with :
  - (a) Cold dil  $\text{KMnO}_4$  /  $\text{OH}$  (b)  $\text{HBr}$  (c)  $\text{O}_2$  in the presence of  $\text{Ag}_2\text{O}$  (d)  $\text{HCl}$

**Q.No.9**

- (a) Explain Mechanism of  $\text{S}_{\text{N}}1$  reactions with a suitable example. (4)
- (b) For detection of Aldehydes, write down any two tests and also give their reactions. (4)

Time :	20 Minutes	Inter ( Part II )	( New Pattern )
Marks :	17	Session (2015 -17) to (2017 - 19)	Group 2nd

Note : Four possible choices A , B , C , D to each question are given. Which choice is correct fill that circle in front of that Question No. Use Marker or Pen to fill the circles. Cutting or filling two or more circles will result in Zero Mark in that Question.

### Bahawalpur Board-2019

Q.No.1	Which one is not a Periodic Property :  (A) Ionization Energy (B) Density (C) Atomic Radii (D) Hydration Energy
(2)	Which element is deposited at the Cathode during the Electrolysis of Brine in Nelson's Cell :  (A) H <sub>2</sub> (B) Na (C) Cl <sub>2</sub> (D) O <sub>2</sub>
(3)	Metal used in Thermite Process is : (A) Iron (B) Copper (C) Aluminium (D) Zinc
(4)	Maximum No. of unpaired electrons are in : (A) O <sub>2</sub> (B) O <sub>2</sub> <sup>+</sup> (C) O <sub>2</sub> <sup>2+</sup> (D) O <sub>2</sub> <sup>2-</sup>
(5)	Cl <sub>2</sub> O <sub>7</sub> reacts with water to form :  (A) Hypochlorous Acid (B) Chloric Acid (C) Perchloric Acid (D) Chlorine and Oxygen
(6)	Which one is non - typical transition element : (A) Cr (B) Mn (C) Zn (D) Fe
(7)	Tetra Ethyl Lead (T.E.L.) is used as :  (A) Pain Killer (B) Petroleum Additive (C) Fire Extinguisher (D) Moth Repellent
(8)	Synthetic Rubber is made by Polymerization of :  (A) Chloroform (B) Acetylene (C) Divinyl Acetylene (D) Chloroprene
(9)	Conversion of n-hexane to benzene by heating in the presence of Pt is called as :  (A) Isomerization (B) Aromatization (C) Dealkylation (D) Rearrangement
(10)	For which set of Mechanism Step One (1st) is same  (A) E1 and E2 (B) S <sub>N</sub> 1 and E1 (C) S <sub>N</sub> 2 and E2 (D) S <sub>N</sub> 1 and S <sub>N</sub> 2
(11)	According to Lewis concept Ethers behave as :  (A) Acid (B) Base (C) Both Acid and Base (D) Amphoteric
(12)	Acetone + HCN give Cyanohydrin. It is the example of :  (A) Electrophilic Addition (B) Electrophilic Substitution (C) Nucleophilic Addition (D) Nucleophilic Substitution
(13)	Origin of Formic Acid is : (A) Milk (B) Butter (C) Red Ants (D) Oil
(14)	Addition Polymer is : (A) Nylon 6,6 (B) Polystyrene (C) Terylene (D) Epoxy Resin
(15)	Quantity Range of Micronutrients is :  (A) 4 – 40 g (B) 6 – 200 g (C) 6 – 200 Kg (D) 4 – 40 Kg
(16)	Peroxyacetyl – Nitrate (PAN) is an Irritant of : (A) Eye (B) Nose (C) Stomach (D) Ears
(17)	Which one is not present in RNA : (A) Cytosine (B) Adenine (C) Thiamine (D) Uracil

Make Diagram where necessary.

Part - I

22 x 2 = 44

**Q.No.2**

- (i) Ionic character of Halides decreases from left to right in a period. Explain.
- (ii) Why the second value of electron affinity of an element is usually shown with a positive sign?
- (iii) Write the chemistry of Borax Bead Test.
- (iv) Give balanced equations to represent the following reactions :
  - (a) Borax is heated with  $\text{CaO}$  (b)  $\text{Al}_2\text{O}_3$  is heated with  $\text{NaOH}$  solution.
- (v) Why are Liquid Silicones preferred over Ordinary Organic Lubricants?
- (vi) Give uses of Boric Acid.
- (vii) Complete and Balance the following equations :
  - (a)  $\text{KNO}_3 + \text{H}_2\text{SO}_4 \longrightarrow$  (b)  $\text{NO}_2 + \text{H}_2\text{SO}_4 \longrightarrow$
- (viii) Give the advantages of Contact Process for the manufacture of Sulphuric Acid.
- (ix) Give two methods of preparation of  $\text{PCl}_5$ .
- (x) What are the prospects of Fertilizer Industry in Pakistan?
- (xi) What are essential nutrients and why are these needed for plant growth?
- (xii) What are Leachates?

**Q.No.3**

- (i) What is Catenation? Why it is important process?
- (ii) Write down structural formulas of following compounds :
  - (a) 3-Ethylpentane (b) 4-Ethyl-3,4-dimethylheptane
- (iii) How non-polarity of Alkanes is related to their unreactivity?
- (iv) Write down structural formulas of the followings :
  - (a) 3-Chloriodobenzene (b) 2-Bromonitrobenzene
- (v) What is Wurtz-Fittig Reaction? Write its equation also.
- (vi) Write down the reaction of Grignard's Reagent with Water. Write mechanism of reaction also.
- (vii) Define Leaving Group in Nucleophilic Substitution Reactions. Give one example.
- (viii) How Phenol is prepared by Dow's Method?
- (ix) Write down the structural formulas of the : (a) Sodium Ethoxide (b) Sodium Phenoxide
- (x) Write down basic characters of Amino Acids.
- (xi) What happens when Carboxylic Acid reacts with metals? Give one example.
- (xii) What is Vinegar? How Acetic Acid is prepared in Laboratory by Hydrolysis of Methyl-Nitrile?

**Q.No.4**

- (i) What is Available Chlorine? How is Available Chlorine produced?
- (ii) Perchloric Acid is stronger than Chloric Acid. Justify.
- (iii) How does Fluorine differ from other Halogens?
- (iv) Define Co-ordination Number with an example.
- (v) Give an Industrial Method for the preparation of Ethanal.
- (vi) How is Calcium Acetate converted into Acetone?
- (vii) What is the difference between Fats and Oils?
- (viii) What is Acid Number? How is it determined?
- (ix) Give two importance of Proteins.

Part - II



**Q.No.5**

- (a) What are the improvements made in the Mendeleev's Periodic Table? (4)
- (b) Discuss the differences of Li with other members of Alkali Metals (any eight points) (4)

**Q.No.6**

- (a)  $\text{KMnO}_4$  acts as an Oxidizing Agent. Give four reactions in support of your answer. (4)
- (b) How are Oil Spillage and Detergents affecting the Marine Life? (4)

**Q.No.7**

- (a) Explain the reforming of Petroleum with suitable example. (4)
- (b) Describe the structure of Benzene on the basis of Atomic Orbital Treatment. (4)

**Q.No.8**

- (a) How does Ethyne reacts with :
  - (a) Hydrogen (b) Halogen Acid (c) Alkaline  $\text{KMnO}_4$  (d) 10%  $\text{H}_2\text{SO}_4$  in the presence of  $\text{HgSO}_4$ .
- (b) Write method for the preparation of Methanol along with its flow sheet diagram. (4)

**Q.No.9**

- (a) What are Nucleophilic Substitution Reactions? Explain  $\text{S}_{\text{N}}1$  reactions in detail. (4)
- (b) What do you mean by Aldol Condensation Reactions? Explain it with mechanism. (4)