ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

EXAMINATION MATERIAL ZUEB - 2022

CHEMISTRY XII

SECTION "A" MULTIPLE CHOICE QUESTION (MCQ'S)

CHP # 01: Periodic Classification

SUB TOPIC
1.6 Modern periodic law-Periodic table based on Moseley's contribution **1.7** Classification and long form of periodic table on the basis of electronic configuration **1.8** Types of elements based on electronic configuration

1- Octet rule is fulfilled by all noble gases except:

a. Ne

b. **He**

c. Ar

d. Xe

2- The element belonging to group VA and 3rd period has the atomic number:

a. 7

b. 13

c. **15**

d. 23

3- Elements of group IB are called:

a. Normal elements

b. Rare earth metals

c. **Coinage metals**

d. Alkali metal

4- Coinage metals are element of 1B group and these include:

a. **Cu,Ag,Au**

b. Zn,Cd,Hg

c. Fe,Co,Ni

d. Cu,Zn,Ni

5- The electronic configuration of the outer shell of an electron is $4s^2,3d^{10},4p^1$. It belongs to:

a. IA group and 3rd period

b. IIA group and 4th period

c. IIIA group and 3rd period

d. **IIIA group and 4th period**

6- Elements of group IB are called:

a. Alkali metals

b. Rare earth metals

c. Alkaline earth metals

d. Coinage metals

7- The first-seven groups of the periodic table are divided into sub-groups 'A' consisting of:

a. Transition elements

b. Representative elements

c. Transition elements

d. Complex elements

8- The metal ion having the highest number of unpaired electrons is:

a. **Mn^{+2}**

b. Fe^{+2}

c. Co^{+2}

d. Ni^{+2}

9- The number of elements in each lanthanide and actinide series is:

a. 2

b. **14**

c. 18

d. 32

10. The elements of same group have the:

a. Same number of electrons

b. Same number of protons

c. Same valence shells

d. **Same number of valence electrons**

11- Elements belonging to the same group in the periodic table are:

a. Ca and Na

b. Ca and Be

c. Ca and Li

d. Ca and K

12- The number of valence electrons in the elements of IIA Group is:

a. 1

b. **2**

c. 3

d. 4

CHP # 02: Hydrogen

SUB TOPIC
2.2 Position of hydrogen in the periodic table **2.4** Atomic hydrogen **2.5** Binary compounds of hydrogen **2.6** Isotopes of hydrogen

1- The nucleus of tritium consists of:

a. One proton only
b. One proton and one neutron
c. Two protons and two neutrons
d. One proton and two neutrons

2- Antidote of H_2S poisoning is very dilute:

a. Nitrogen
b. Oxygen
c. **Chlorine**
d. Helium

3- The number of neutrons in protium is:

a. Zero
b. 1
c. 2
d. 3

4- Metallic hydrides are also known as:

a. Interstitial hydrides
b. Borderline hydrides
c. Covalent hydrides
d. Ionic hydrides

5- Having half-filled shell, hydrogen resembles the:

a. Elements of VA group
b. **Elements of IV A group**
c. Elements of VIA group
d. Elements of VIIA group

7- Hydrides of group IV A are:

a. Acidic

b. Basic

c. Neutral

d. Amphoteric

8- The ratio of electrons, protons and neutrons in Deuterium is:

a. (1:1:0)

b. **(1:1:1)**

c. (1:1:2)

d. (1:2:1)

9- The binary compounds of hydrogen with transition metals are called:

a. Ionic hydrides

b. Covalent hydrides

c. Ionic hydrides

d. Borderline hydrides

10- Interstitial hydrides are also named as:

a. Metallic hydrides

b. Covalent hydrides

c. Ionic hydrides

d. Borderline hydrides

11- The ratio of electrons, protons and neutron in protium is:

a. (1:1:0)

b. (1:1:1)

c. (1:1:2)

d. (1:2:1)

12- An example of electron deficient hydrides is:

a. BH_3

b. $NaBH_4$

c. NaH

d. CH_4

13- This has the minimum hydration energy:

a. Na^+

b. K^+

c. Rb^+

d. Cs^+

14- Hydride ion and helium atom have the same:

a. Number of protons

b. Number of electrons

c. Number of neutrons

d. Valency

15- Water gas is produced by passing steam over red-hot coke at:

a. 800°C

b. 900°C

c. 600°C

d. 1000°C

16- Hydrogen shows the oxidation state/s:

a. Zero Only

b. -1 Only

c. +1 Only

d. All of these

17- Ordinary hydrogen is unique in not having_____.

a. Electron

b. Proton

c. Neutron

d. Photon

18- On passing steam over red-hot coal we get_____.

a. Water gas

b. Ethane

c. Carbon monoxide

d. Hydrogen Gas

CHP # 03: S-Block Elements

SUB TOPIC
3.1 Introduction **3.2** Group trends in alkali and alkaline earth metals **3.3** Chemical properties of s-block elements **3.4** Occurrence and Extraction of metals

1- This metal forms superoxide:

a. Li

b. Be

c. K

d. Mg

2- Sodium burns with excess of oxygen to from its:

a. Peroxide

b. Superoxide

c. Sodium and iron

d. Sodium and silver

3- Sodium amalgam is an alloy of:

a. Sodium and lead

b. **Sodium and mercury**

c. Sodium and iron

d. Sodium and silver

4- N_2 gas liquefies at this temperature:

a. -273°C

b. -200°C

c. -196°C

d. -188°C

5- Density of 98% HNO_3 is:

a. 1.51 g/l

b. 1.4 g/l

c. 1.83 g/l

d. 1.42 g/l

6- The element having the symbol ‘Ga’ belongs to this family:

a. Carbon

b. Nitrogen

c. Boron

d. Beryllium

7- NaOH is named as caustic soda because:

a. It is used in soda water

b. It corrodes organic tissues

c. It reacts with fats to for soap

d. It reacts with chlorine gas

8- **Brine is a concentrated aqueous solution of:**

a. Sodium Carbonate

b. Sodium Sulphate

c. Alum

d. Sodium Chloride

9- Sodium reacts with water more vigorously than lithium because it:

a. Has higher atomic weight

b. Is more electronegative

c. Is a metal

d. Is more electropositive

CHP # 04: P-Block Elements

SUB TOPIC
3.5 Introduction
4.3 Metallurgy of metal
4.6 Nitric Acid (HNO_3)
4.9 Sulphuric acid by contact process
4.10 Chlorine

1- The product of heating boric acid to 140°C is:

a. Orthoboric acid

b. Metaboric acid

c. Pyroboric acid

d. Boric acid

2- Both crystalline forms of Sulphur exist at this transition temperature:

a. 94.5°C

b. 95.5°C

c. 96.5°C

d. 98.5°C

3- The mixture of aluminum nitrate and aluminum powder is called:

a. Duralumin

b. Ammonal

c. Carnallite

d. Alum

4- Cycloalkanes have the general formula:

a. C_nH_{2n+1}

b. C_nH_{2n}

c. C_nH_{2n-1}

d. C_nH_{2n-2}

5- Chemical composition of colemanite is:

a. $Ca_2B_6O_{11}.5H_2O$

b. $CaB_4O_7.4H_2O$

c. $Na_2B_4O_7.4H_2O$

d. $CaNaB_5O_7.8H_2O$

6- Plaster of Paris is obtained by heating:

a. **Gypsum**
b. Epsom
c. Limestone
d. Dolomite

7- The temperature at which two allotropic forms of an element exist in equilibrium state is:

a. **Transition temperature**
b. Equilibrium temperature
c. Normal Temperature
d. Unstable Temperature

8- Ruby is an oxide of:

a. Zinc
b. **Aluminium**
c. Iron
d. Copper

9- Rhombic Sulphur and monoclinic Sulphur are in equilibrium at this temperature:

a. **95.5°C**
b. 96.6°C
c. 105°C
d. 113°C

10- Aluminium bronze contains:

a. **10% of Al and 90% of Cu**
b. 20% of Al and 80% of Cu
c. 30% of Al and 70% of Cu
d. 50% of Al and 50% of Cu

11- Hypo is used as:

a. **Fixer**
b. Developer
c. Reducer
d. Blinder

12- Kipp's apparatus is used to prepare:

a. SO_2
b. **H_2S**
c. HCl
d. Cl_2

13- The formula of dolomite is:

a. $KCl.MgCl_2$
b. $MgSO_4.7H_2O$
c. $MgCO_3.CaCo_3$
d. $MgCO_3$

14- The bond angel and bond distance between the atoms in rhombic Sulphur are:

a. **2.12A° and 105°**
b. 2.3A° and 105°
c. 2.12A° and 107°
d. 2.22A° and 108°

15- The chemical formula $Al_2O_3.3H_2O$ stands for:

a. Diaspore
b. Corundum
c. Bauxite
d. Gibbisite

16- The formula of hypochlorous acid is:

a. **HOCl**
b. $HClO_2$
c. $HClO_3$
d. $HClO_4$

17- The chemical name of laughing gas is:

a. Nitric oxide

b. Nitrous oxide

c. Nitrogen Trioxide

d. Nitrogen pentoxide

18- $Ca_2B_6O_{11}.5H_2O$ is the chemical formula of:

a. Cryolite

b. **Colemanite**

c. Bauxite

d. Borax

19- This metal forms super oxide:

a. Li

b. Be

c. K

d. Mg

20- The substance which contains two or more metals is called:

a. Polymer

b. Homologous

c. Alloy

d. Allotropy

21- The crystalline solids that contain water molecules in their crystals are called:

a. Hydrates

b. Hydrides

c. Hydrolyzed

d. Electrolytes

22- Bauxite is an ore used for the extraction of:

a. Borax

b. Boric acid

c. Iron

d. Aluminium

23- Ammonal is a mixture of:

a. Aluminium powder and aluminiumnitrate

b. Aluminium powder andaluminium sulphate

c. Aluminium powder and sodiumnitrate

d. Aluminium powder and potassiumnitrate

CHP # 05: D-Block Elements (Transition Elements)

SUB TOPIC
5.1 Introduction
5.3 General characteristics
5.4 Metallurgy of Copper
5.6 Copper Sulphate ($CuSO_4.5H_2O$)
5.7 Potassium Chromate (K_2CrO_4)
5.10 Corrosion and its prevention
5.12 Silvering of Mirrors
5.13 Tin Plating

1- This imparts green colour to glass:

a. CoO

b. MnO_2

c. CuO

2- **Cr_2O_3**The element with atomic number 33 belongs to:

a. s-block

b. p-block

c. d-block

d. f-block

3- Galvanized iron means iron coated with:

a. Zn

b. Cu

c. Al

d. Sn

4- H_2S is:

a. An oxidizing agent

b. A reducing agent

c. A sulphonating agent

d. A bleaching agent

5- Stainless steel is an alloy of:

a. Fe, Cr and Ni

b. Al, Cu and Ni

c. Al, Cr and Zn

d. Fe, Cu and Al

6- This imparts red colour to glass:

a. Cr_2O_3

b. CuO

c. CoO

d. ZnO

7- The process of covering iron sheet by a layer of Zinc is known as:

a. Tempering

b. Tin plating

c. Galvanizing

d. Annealing

8- Tincal is a mineral of:

a. Al

b. Si

c. B

d. C

9- Molecular formula of Tincal is:

a. H_3BO_3

b. **$Na_2B_4O_7.10H_2O$**

c. $H_2B_4O_7$

d. $Na_2B_4O_7.7H_2O$

10- In $K_2Cr_2O_7$. Oxidation number of Cr is:

a. +7

b. **+6**

c. +5

d. +4

11- The harmful and undesirable reaction of metals, when exposed to atmosphere or any chemical agent, is knownas:

a. Allotropy

b. **Corrosion**

c. Electroplating

d. Cracking

CHP # 06: Introduction to Organic Chemistry

SUB TOPIC
6.1 Natural sources of organic compounds
6.4 Polymerization
6.5 Classification of organic compounds or Types of organic compounds
6.6 Homologous series
6.7 Isomerism
6.8 Nomenclature

1- The number of isomers of Pentane is:

a. **3**
b. 5
c. 7
d. 9

2- Propanone and propanal are:

a. Chain isomers
b. **Functional group isomers**
c. Position isomers
d. Metamers

3- Octane number is related to:

a. **Gasoline**
b. Kerosene
c. Diesel oil
d. Lubricating oil

4- This is used to increase the Octane number and efficiency of petrol:

a. Ni
b. Pt
c. V_2O_5
d. **$(C_2H_5)_4Pb$**

5- Glucose and fructose are:

a. Position isomers
b. Chain isomers
c. **Functional group isomers**
d. Metamers

6- The boiling point range 40° - 200°C is for this fraction of petrol:

a. Wax

b. Gasoline

c. Heavy Oil

d. Jet Fuel

7- Dimethyl ether and ethyl alcohol are:

a. Metamers

b. **Functional group isomers**

c. Position isomers

d. Cis – Trans isomers

8- The compounds 1 – butene and 2 – butene are:

a. Position isomers

b. Chain isomers

c. Functional group Isomers

d. Metamers

CHP # 07: Chemistry of Hydrocarbons

SUB TOPIC
7.1 Open chain and closed chain hydrocarbons
7.3 Chemistry of Ethane
7.4 Chemistry of Ethene
7.5 Chemistry of Ethyne
7.6 Benzene
7.7 The Molecular orbital treatment of Benzene

1- This one is condensation polymer:

a. PVC
b. PVA
c. Polyethene
d. Terylene

2- Hybridization in the carbon atom of carbonyl group is of this type:

a. Sp
b. **Sp^2**
c. Sp^3
d. Dsp^2

3- Hydrides of VA group are:

a. **Basic**
b. Acidic
c. Amphoteric
d. Neutral

4- Another name of methane is:

a. Mustard gas
b. Oil gas
c. Coal gas
d. **Marsh Gas**

7- This is a natural polymer:

a. **Cellulose**
b. PVC
c. Nylon
d. Terylene

8- This group is meta directing:

a. -R
b. -OR
c. -COOR
d. -X

9- Blood cancer is caused by:

a. Methane
b. Ethane
c. Butane
d. Benzene

10- Cycloalkanes has the general formula:

a. C_nH_{2n+2}
b. C_nH_{2n}
c. C_nH_{2n-2}
d. **C_nH_{2n+4}**

11- This gas was used in the first world war:

a. Mustard gas
b. Coal gas
c. Ammonia Gas
d. Phosgene gas

12- The hybridization in the carbon atom of carbonyl group is:

a. sp
b. sp^2
c. sp^3
d. d^2sp^3

13- This gas is produced by treating ethane with Sulphur monochloride:

a. Tear gas
b. **Mustard gas**
c. Laughing Gas
d. Marsh gas

14- This gas is used in welding:

a. Methane

b. Ethyne

c. Ethane

d. Ethene

15- In Tollens's test, the end product is:

a. White ppt

b. Red ppt

c. Yellow ppt

d. Silver mirror

16- Molecular formula of chloroform is:

a. CH_3Cl

b. $CHCl_3$

c. CH_2Cl_2

d. **CCl_4**

17- Tollen's reagent is:

a. Ammoniacal silver nitrate

b. Ammoniacal cuprous oxide

c. Ammoniacal cuprouschloride

d. Ammoniacal silver bromide

18- Ethylene is used as/in:

a. Anesthetic

b. Ripening of fruits

c. Preparing Mustard gas

d. All of these

19- The metal present in Grignard's reagent is:

a. Mg

b. Mn

c. Cu

d. Fe

20- The chlorination of methane is an example of:

a. Aaddition reaction

b. Substitution reaction

c. Elimination reaction

d. Oxidation reaction

21- Markownikoff's rule will be applicable in the addition of HBr on:

a. $CH_2=CH_2$

b. $CH \equiv CH$

c. **$CH_2 = CHBr$**

d. None of them

22- The general formula of alkene is:

a. C_nH_{2n+2},

b. C_nH_{2n}

c. **C_nH_{2n-2}**

d. C_nH_{2n+1}

CHP # 08: Alkyl Halides

SUB TOPIC
8.1 Classification of Alkyl Halides **8.2** Nomenclature **8.4** Mechanism of Nucleophilic substitution Reactions

1- This is not a nucleophile:

a. OH^-

b. NH_3

c. **BF_3**

d. CN^-

2- The most stable carbonium ion os:

a. R_3C^+

b. R_2CH^+

c. R_2CH^{+2}

d. CH_3

3- The first step is similar in this mechanism:

a. E_1 and E_2

b. SN_1 and E_2

c. E_1 and SN_2

d. **SN_1 and E_1**

4- General formula of alkyl halides is:

a. $C_nH_{2n}X$

b. $C_nH_{2n-2}X$

c. **$C_nH_{2n+1}X$**

d. C_nH_nX

5- A carbon atom having a positive charge is called:

a. Hydroxide ion

b. Halide ion

c. Carbonium ion

d. Carbon ion

6- Catenation is a process in which carbon shows the properties of:

a. Making single bonds

b. Making long chains or ringsof carbon atoms

c. Hybridization

d. Isomerism

7- It is not a nucleophile:

a. OH^-

b. NH^-

c. **BF_3**

d. CN^-

CHP # 09: Carbon Compounds with Oxygen Containing Functional Groups

SUB TOPIC
9.1 Alcohols **9.2** Phenols **9.3** Aldehydes and Ketones **9.4** Carboxylic Acids

1- Reduction of aldehyde gives:

a. Carboxylic acid

b. **Alcohol**

c. Ester

d. Ether

2- Milk sugar is also called:

a. Glucose

b. Fructose

c. Lactose

d. Sucrose

3- The functional group is RSH is:

a. Aldehyde

b. Carboxylic acid

c. Ether

d. Thioalcohol

4- Rectified spirit contains:

a. 75 80 %alcohol

b. 92 – 95 %alcohol

c. 89 – 85 %alcohol

d. 100%alcohol

5- It is used as a preservative for biological specimens:

a. Phenol

b. Acetone

c. Formalin

d. Benzene

6- The commercial name of phenol formaldehyde polymer is:

a. Celluloid

b. Teflon

c. P.V.C

d. Bakalite

7- In acetones, the numbers of bonds are:

a. Nine Ϭ and one π

b. Ten Ϭ

c. Eight Ϭ and two **π**

d. Nine **π** and one Ϭ

8- The reagent converts acetic acid into Acetyl chloride is:

a. NaCl

b. HCl/ZnCl

c. $SOCl_2$

d. HCl

9- Another name for wood spirit is:

a. Ethyl alcohol
b. **Methyl alcohol**
c. Propyl alcohol
d. Butyl alcohol

10- Ethyl acetate is present in:

a. Pineapple
b. Orange
c. Guava
d. Lemon

11- This is the general formula of Ketones:

a. R-C-H	b. **R-C-R**	c. R-C-OH	d. R-O-R

12- The functional group in RSH is:

a. Alcohol
b. Carboxylic acid
c. Ether
d. Thioalcohol

13- The percentage by weight of ethanol in rectified spirit is:

a. 92 – 95
b. 70 – 80
c. 85 – 90
d. 50 – 60

14- Chemical name for fruit sugar is:

a. Sucrose
b. Glucose
c. Lactose
d. Fructose

15- The functional group present in cresol is:

a. **Phenolic – OH**

b. Carboxylic – COOH

c. Alcoholic – OH

d. Aldehydic – CHO

16- Grignard's reagent reacts with ketone to give:

a. 1°-alcohol

b. 2°-alcohol

c. **3°-alcohol**

d. Phenol

17- Methylated spirit is amixture of:

a. **CH_3OH and CH_3Cl**

b. CH_3OH and CH_4

c. CH_3OH and C_2H_5OH

d. CH_3OH and HCl

18- Fruity smell is produced when C_2H_5OH is reacted with:

a. **CH_3COOH**

b. PCl_3

c. PCl_5

d. CH_3COCH

19- The sweetest sugar is:

a. Fructose

b. Glucose

c. **Sucrose**

d. Lactose

20- The general formula for aldehyde:

a. R – OH

b. – COOH

c. RCOR

d. R – CHO

CHP # 10: Chemistry of Life

SUB TOPIC
9.5 Definition and Introduction **10.3** Carbohydrates **10.4** Amino Acids **10.7** Enzymes

1- Rickets is caused by the deficiency of vitamin:

a. A

b. B

c. C

d. D

2- Glycogen is a:

a. Monosaccharide

b. Oligosaccharide

c. Polysaccharide

d. Disaccharide

3- Citrus fruits are important source of vitamin:

a. B

b. **C**

c. A

d. E

4- This in not nitrogenous fertilizer:

a. Urea

b. Ammonium sulphate

c. Ammonium nitrate

d. Triple phosphate

5- It is not a member of vitamin B complex:

a. Niacin
b. Folic acid
c. **Retinol**
d. Riboflavin

6- Royal water is a mixture in the ratio of 1:3 by volume of:

a. HCL,H_2SO_4
b. HNO_3,HCl
c. H_2SO_4,HNO_3
d. HCl,HF

7- Cod liver oil is a source of:

a. Vitamin A
b. Vitamin B
c. Vitamin C
d. Vitamin K

8- The number of monosaccharide units in oligosaccharides is:

a. 2 – 8
b. **2 – 10**
c. 2 – 12
d. 2 – 20

9- The formula of valeric acid is:

a. $CH_3.(CH_2)_2.COOH$
b. $CH_3.(CH_2)_3.COOH$
c. $CH_3.(CH_2)_4.COOH$
d. $CH_3.(CH_2)_5.COOH$

10- Citrus fruits are important sources of vitamin:

a. B
b. **C**
c. D
d. E

11- E.D.T.A is this type of ligand:

a. Bidentate
b. Tetradentate
c. Pentadentate
d. Hexadentate

12- Fertilizer maintains the range of pH of siol at:

a. 7.0 – 8.0
b. 4.0 – 6.0
c. 1.2 – 4.2
d. 12.0 – 14.0

13- EDTA is:

a. Monodentate ligand
b. Chelate
c. Bidentate ligand
d. Multidentate ligand

14- This is animal starch:

a. Glycogen
b. Amylase
c. Cellulose
d. Amino acid

15- This formula of caproic acid is:

a. $CH_3.(CH_2)_2.COOH$
b. $CH_3.(CH_2)_3.COOH$
c. $CH_3.CH_2.COOH$
d. $CH_3.(CH_2)_4.COOH$

16- This number of carbon atoms in a monosaccharide is:

a. 3 – 10
b. 2 – 8
c. 3 – 9
d. 4 – 9

17- The functional group is present in oil and fats:

a. Carboxylic group

b. Alcoholic group

c. Aldehydic group

d. Ester group

18- Cholestrol, cholic acid and progesterone are:

a. Amino acids

b. Proteins

c. **Steroids**

d. Enzymes

19- The human body stores a part of glucose in liver in the form of:

a. Glycogen

b. Amylase

c. Amylopectin

d. Cellulose

20- The vitamin is water soluble:

a. Vitamin A

b. Vitamin C

c. Vitamin D

d. Vitamin K

CHP # 11: Chemical Industries in Pakistan

SUB TOPIC	
10.8	Fertilizer
11.3	Glass
11.5	Plastics

1- The green colour of glass is due to the presence of:

a. CuO

b. CoO

c. **Cr_2O_3**

d. ZnO

2- This acid is used for etching of glass:

a. HF

b. HCl

c. HBr

d. HI

3- Saponi faction results in the formation of:

a. Glass

b. Polymer

c. Fertilizer

d. Soap