


CHEMISTRY GROUP : FIRST		TIME : 20 MINUTES
		MARKS : 17


OBJECTIVE

NOTE: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question.

QUESTION NO. 1

- 1 Planar triangular shape is associated with which set of hybrid orbitals
(A) sp^3 (B) sp (C) sp^2 (D) dsp^2
- 2 Formula of chloroform is
(A) CH_3Cl (B) CCl_4 (C) CH_2Cl_2 (D) $CHCl_3$
- 3 During nitration of benzene, the active nitrating agent is
(A) NO_3 (B) NO_2^+ (C) NO_2 (D) HNO_3
- 4 When Ethanol ($CH_3 - CH_2 - OH$) is made to react with ethyl magnesium bromide the product formed is
(A) CH_4 (B) $CH_2 = CH_2$ (C) C_2H_2 (D) $CH_3 - CH_3$
- 5 Which compound is called a universal solvent?
(A) H_2O (B) CH_3OH (C) C_2H_5OH (D) $CH_3 - O - CH_3$
- 6 One of the following compounds will react with Tollen's reagent.
(A) $CH_3 - \overset{O}{\parallel}C - H$ (B) $CH_3 - \overset{O}{\parallel}C - CH_3$ (C) $CH_3 - \overset{O}{\parallel}C - OH$ (D) $CH_3 - \overset{O}{\parallel}C - CH_2 - CH_3$
- 7 One of the following is not a fatty acid
(A) Acetic acid (B) Propanoic acid (C) Butanoic acid (D) Phthalic acid
- 8 Which one of the following enzymes brings about the hydrolysis of fats?
(A) Urease (B) Maltase (C) Lipase (D) Zymase
- 9 Which is not a calcareous material?
(A) Lime (B) Clay (C) Marble (D) Marine Shell
- 10 Disinfection of chlorine is
(A) Inexpensive (B) Expensive (C) Rapid (D) Slow
- 11 Ecosystem is a smaller unit of
(A) Lithosphere (B) Hydrosphere (C) Atmosphere (D) Biosphere
- 12 Select the two normal elements are present in Fifth period
(A) Rb, Sr (B) Cs, Ba (C) Fr, Ra (D) La, Hf
- 13 The mineral ($CaSO_4 \cdot 2H_2O$) has the general name
(A) Gypsum (B) Dolomite (C) Calcite (D) Epsom salt
- 14 One of the element forms an ion with charge $3+$
(A) Beryllium (B) Aluminium (C) Carbon (D) Silicon
- 15 Choose the gas which is obtained by the reaction of Formic acid with conc: H_2SO_4
(A) C_2H_2 (B) C_2H_4 (C) CO_2 (D) CO
- 16 One of the halogen occurs naturally in a positive oxidation state
(A) Fluorine (B) Chlorine (C) Iodine (D) Bromine
- 17 Group VI – B of transition elements contains
(A) Zn, Cd, Hg (B) Cr, Mo, W (C) Fe, Ru, Os (D) Mn, Te, Re

12th CLASS – 1st Annual 2024

CHEMISTRY		TIME: 2 HRS 40 MINUTES
GROUP : FIRST	SUBJECTIVE PART	MARKS: 68
	SECTION – I	

QUESTION NO. 2 Write short answers any Eight (8) of the following **16**

i	Why alkali metals are very reactive ?	<i>DQK-1-24</i>
ii	What are the s – block elements and why are they called so ?	
iii	How do transition elements display colours ?	
iv	K_2CrO_4 and $K_2Cr_2O_7$ show similar properties. Justify this.	
v	How does brown pulp converted into white pulp in paper industry ?	
vi	Give formula of (i) Dolomite (ii) Natron	
vii	What will happen when Lithium Hydride is treated with water.	
viii	Starting from (primary) alkyl halide prepare ethylamine	
ix	How the molecular mass of polymer is determined ?	
x	What is starch ? Write its two uses.	
xi	What are lipids ? What is their importance ?	
xii	How Grignard reagent react with CH_3CHO ?	

QUESTION NO. 3 Write short answers any Eight (8) of the following **16**

i	Why is SO_3 dissolved in H_2SO_4 and not in H_2O ?
ii	Write down any four uses of HNO_3
iii	What are Freons and Teflon ?
iv	Write down any four applications of noble gases.
v	What are alicyclic compounds ? Give its two examples.
vi	Define knocking. How does it improve ?
vii	How formaldehyde is prepared from ethene ?
viii	How acetylene is prepared on industrial scale ?
ix	Why alkanes are less reactive ?
x	Differentiate between oxidizing and reducing smog.
xi	How chlorofluorocarbons destroy ozone ?
xii	What is dissolved oxygen ?

QUESTION NO. 4 Write short answers any Six (6) of the following **12**

i	What is the Chemistry of Borax – bead Test ?
ii	Write down any two uses of Aluminium.
iii	Why are liquid silicones preferred over ordinary organic lubricants ?
iv	What are the major products of bromination of the following compounds? (a) Toluene (b) Benzaldehyde
v	Ethanol gives different products with conc. H_2SO_4 under different conditions , give reactions.
vi	Write IUPAC names of the following compounds. (a) $(CH_3)_2CH - OH$ (b) $(CH_3)_2CHCH_2OH$
vii	Why formaldehyde does not give aldol condensation reaction ?
viii	What is internal salt of amino acids ?
ix	Write down the reaction of acetic acid with ammonia and its product on heating.

SECTION-II

Note: Attempt any Three questions from this section

8 x 3 = 24

Q.5.(A)	Discuss the position of hydrogen in a periodic table with IV A group elements.
(B)	How is sodium prepared commercially by Down's Cell ?
Q.6.(A)	Write down four uses of Chlorine in daily life.
(B)	Explain preparation of urea fertilizer on large scale.
Q.7.(A)	Define atomic orbital hybridization. Explain sp hybridization with formation of ethyne.
(B)	Explain the mechanism of SN_1 reactions.
Q.8.(A)	How will you prepare from ethyne. (i) Acetaldehyde (ii) Oxalic acid (iii) Benzene (iv) chloroprene
(B)	How will you prepare from Acetaldehyde (i) Lactic acid (ii) Acetal
Q.9.(A)	Discuss the nitration of benzene with reaction mechanism.
(B)	How will you identify 1 – propanol , 2 – propanol and 2 – methyl – 2 – propanol ? Justify the answer with chemical test.



P

OBJECTIVE

~~SLD 224 DGR 2-24~~

NOTE:





You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question.

QUESTION NO. 1

- 1 Which of the following is not a fatty acid ?
(A) Propanoic acid (B) Acetic acid (C) Phthalic acid (D) Butanoic acid
- 2 A polymeric substance that is formed in a liquid state and then hardened to a rigid solid is called a
(A) Fibre (B) Plastic (C) Varnish (D) Polyamide resins
- 3 Which is not a calcareous material ?
(A) Lime (B) Clay (C) Marble (D) Marine shell
- 4 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)
- 5 The capacity of organic matter in natural water to consume oxygen within a period of five days is called
(A) DO (B) BOD (C) COD (D) PAN
- 6 Coinage metals are
(A) Ni, Pd, Pt (B) Cu, Ag, Au (C) As, Al, Pd (D) Fe, Si, Sn
- 7 Which element is deposited at cathode during the electrolysis of brine in diaphragm cell ?
(A) H₂ (B) Na (C) Cl₂ (D) O₂
- 8 The chief ore of Aluminium is
(A) Na₃AlF₆ (B) Al₂O₃ · 2H₂O (C) Al₂O₃ (D) Al₂O₃ · H₂O
- 9 Nitrous acid reacts with aminobenzene to produce
(A) Urea (B) Phenol (C) Toluene (D) NH₃
- 10 Which of the following represents the correct electronic configuration of the outermost energy level of an element of zero (VIII A) group in the ground state ?
(A) s²p² (B) s²p⁴ (C) s²p⁵ (D) s²p⁶
- 11 Coordination number of Pt in [PtCl(NO₂)(NH₃)₄] is
(A) 2 (B) 4 (C) 1 (D) 6
- 12 Select from the following the one which is alcohol
(A) CH₃-CH₂-OH (B) CH₃-O-CH₃ (C) CH₃COOH (D) CH₃-CH₂-Br
- 13 The formula of chloroform is
(A) CH₃Cl (B) CCl₄ (C) CH₂Cl₂ (D) CHCl₃
- 14 During nitration of benzene, the active nitrating agent is
(A) NO₂ (B) NO₂⁺ (C) NO₂⁻ (D) HNO₃
- 15 Which reagent does not produce ethane by reacting with ethyl magnesium chloride in the presence of dry ether ?
(A) H₂O (B) NH₃ (C) HCHO (D) C₂H₅OH
- 16 Which compound will have maximum repulsion with water ?
(A) C₆H₆ (B) C₂H₅OH (C) CH₃OCH₃ (D) CH₃CH₂OH
- 17 Which of the following reagents will react with both aldehydes and ketones ?
(A) Grignard reagent (B) Fehling's reagent (C) Benedict's reagent (D) Tollen's reagent

12th CLASS – 1st Annual 2024

CHEMISTRY		TIME: 2 HRS 40 MINUTES
GROUP : SECOND		MARKS: 68
	SUBJECTIVE PART	
	SECTION – I	

QUESTION NO. 2 Write short answers any Eight (8) of the following 16

i	Why diamond is a non – conductor but graphite is a fairly good conductor ?	<i>DGK-2-24</i>
ii	Define ionization energy. How does it vary in the periodic table ?	
iii	Why 2% gypsum is added to Cement ?	
iv	Give the formula of (i) Asbestos (ii) Soapstone (Talc)	
v	How does the process of galvanizing or Zinc Coating protect the iron from rusting ?	
vi	How is the chromate ions converted into dichromate ions. Give the reaction involved.	
vii	Give the two factors which govern the reactivity of alkyl halides.	
viii	How propanoic acid is prepared from Ethyl magnesium Bromide ?	
ix	What are thermoplastic polymers. Give two examples.	
x	Define polysaccharides. Give two examples	
xi	How the proteins are denatured ?	
xii	Define lignin. Why is it removed from pulp ?	

QUESTION NO. 3 Write short answers any Eight (8) of the following 16

i	Why the elements of Group VIA other than oxygen shows more than two oxidation states ?	<i>www.taleem360.com</i>
ii	What is meant by Fuming Nitric acid ?	
iii	Arrange F^- , Cl^- , I^- , Br^- in order of decreasing size.	
iv	Name the Halogen used in water treatment.	
v	Draw flow sheet diagram for the formation of Anthracite.	
vi	Differentiate between petroleum and crude oil.	
vii	How will you synthesize Acetaldehyde from C_2H_2 ?	
viii	Compare the reactivity of ethane and ethene.	
ix	Describe polymerization of ethene.	
x	Define Biochemical Oxygen Demand (BOD) for the quality of water.	
xi	Describe how pesticides are dangerous to humans ?	
xii	Describe Reprocessing for the Recycling of Plastics.	

QUESTION NO. 4 Write short answers any Six (6) of the following 12

i	What are semiconductors and name elements and compounds act as semiconductors ?	<i>www.taleem360.com</i>
ii	Give four uses of Boric Acid.	
iii	Justify that Boric Acid is monobasic Acid.	
iv	What objections were raised on Kekule's structure for benzene molecule ?	
v	How phenol is converted into Bakelite ?	
vi	How Picric Acid is obtained from phenol ?	
vii	What is Silver Mirror Test ?	
viii	How would you convert acetic acid into acetic anhydride ?	
ix	Discuss strecker synthesis for the preparation of amino acid.	

SECTION-II

Note: Attempt any Three questions from this section

8 x 3 = 24

Q.5.(A)	What are hydrides ? Name their types. Give properties of ionic hydrides .	1+1+2
(B)	What are general trends of oxides and hydroxides of alkali and alkaline earth metals ?	2+2
Q.6.(A)	What happens when bleaching powder reacts with (i) HCl (ii) NH_3 (iii) H_2SO_4 (Excess) (iv) CO_2	1+1+1+1
(B)	Describe screening and bleaching steps in Neutral sulphite semi chemical process.	1+3
Q.7.(A)	Define sp^3 hybridization. Discuss it with a suitable example along with labeled diagram.	1+1+2
(B)	Define nucleophilic substitution reaction. Explain SN_2 mechanism in detail.	1+3
Q.8.(A)	Discuss oxidation reactions of alkynes. (any two)	4
(B)	Describe disproportionation reaction in benzaldehyde , when it is treated with aqueous solution of 50 % NaOH at room temperature.	4
Q.9.(A)	Give preparation of benzene with any four methods.	4
(B)	Give reactions for the preparation of phenyl acetate , benzene cyclohexanol and picric acid from phenol.	4