

CHEMISTRY  
GROUP : FIRST

OBJECTIVE

TIME: 20 MINUTES

MARKS: 17

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

QUESTION NO. 1

DGK-12-1-23

- 1 Keeping in view the size of atoms, which order is the correct one?  
(A)  $Mg > Sr$  (B)  $Ba > Mg$  (C)  $Lu > Ce$  (D)  $Cl > I$
- 2 Which one of the following does not belong to alkaline - earth metals?  
(A) Be (B) Ra (C) Ba (D) Rn
- 3 Which element forms an ion with charge +3?  
(A) Beryllium (B) Aluminium (C) Carbon (D) Silicon
- 4 Laughing gas is chemically.  
(A) NO (B)  $N_2O$  (C)  $NO_2$  (D)  $N_2O_4$
- 5 Which of the following hydrogen halide is the weakest acid in solution?  
(A) HF (B) HBr (C) HI (D) HCl
- 6 Total number of transition elements are  
(A) 10 (B) 14 (C) 40 (D) 68
- 7 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
- 8 Synthetic rubber is made by polymerization of  
(A) Chloroform (B) Acetylene (C) Divinylacetylene (D) Chloroprene
- 9 Aromatic hydrocarbons are the derivatives of  
(A) Normal series of paraffins (B) Alkene (C) Benzene (D) Cyclohexane
- 10 In primary alkyl halides, the halogen atom is attached to a carbon which is further attached to how many carbon atoms.  
(A) Two (B) Three (C) One (D) Four
- 11 Ethanol can be converted into ethanoic acid by  
(A) Hydrogenation (B) Hydration (C) Oxidation (D) Fermentation
- 12 Which test is given by Formaldehyde with Tollen's reagent ?  
(A) Silver Mirror Test (B) Sodium Bisulphite Test  
(C) 2, 4 - DNPH Test (D) Bromine water Test
- 13 Primary, Secondary and tertiary alcohols can be identified by test.  
(A) Bromine water Test (B) Lucas Test (C) Silver mirror Test (D) 2, 4 - DNPH Test
- 14 Amino acids reacts with ninhydrin to form intensely coloured ..... product.  
(A) Reddish green (B) Bluish violet (C) Yellowish (D) Pinkish
- 15 Nylon is polyamide made by hexamethylene diamine with.  
(A) Adipic acid (B) Picric Acid (C) Oxalic Acid (D) Acetic Acid
- 16 Urea is high quality  
(A) Potassium fertilizers (B) Phosphatic fertilizers  
(C) Nitrogenous fertilizers (D) Calcarious fertilizers
- 17 Ozone is a gas having oxygen atom.  
(A) Three (B) Two (C) One (D) Four

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GROUP: FIRST

## SUBJECTIVE

TIME: 2 HRS 40 MINUTES

MARKS: 68

DGK-12-1-23

## SECTION-I

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

16

- What is effect of strong heating on orthoboric acid ?
- Justify that Aluminum is amphoteric. Give an examples.
- What are semiconductors and give effect of temperature on semiconductors ?
- Why the straight chain structures of benzene have been ruled out ? Give two reasons.
- Write mechanism for the halogenation of benzene in the presence of catalyst.
- How does sulphonation of benzene take place ? Give its reaction.
- Write cyclic structures of glucose and fructose.
- Explain denaturation of proteins.
- What are steroids? Write structure of steroid nucleus.
- What is the effect of CO on human health ?
- What is meant by hydrosphere ?
- What is meant by recycling of waste ?

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

16

- Draw the structure of ethene according to  $sp^2$ -hybridization.
- Define heterocyclic compounds. Give one example.
- Convert 1-propanol to  $CH_3 - CH_2 - CH_2 - Cl$
- How is ethane formed by the reaction of Grignard reagent?
- Write down any two uses of ethene.
- What is laughing gas ?
- Draw the structure of white phosphorus and red phosphorus.
- $P_2O_5$  is a powerful dehydrating agent. Prove it giving two examples.
- How will you convert  $CH_3 - CH_2 - Br \longrightarrow (CH_3 - CH_2)_4 N^+ Br^-$
- Prepare 1-propanol by using methanal.
- Write down any four qualities of a good fertilizer.
- Mention non woody raw materials for the manufacturing of paper (any four)

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

12

- What are paramagnetic and diamagnetic substances ?
- Write two uses of  $KMnO_4$
- Define coordination number and coordination sphere.
- Give the reactions of Ethanol with (i)  $SOCl_2$  (ii)  $PCl_5$
- Why is phenol acidic in nature ?
- Give the iodoform test to distinguish between methanol and ethanol.
- Convert acetaldehyde into lactic acid.
- Describe Benedict's solution test.
- Convert ethanol into ethanoic acid.

## SECTION-II

Note: Attempt any Three questions from this section

8 x 3 = 24

Q.5-(A)	How do you justify the position of hydrogen at the top of I-A and VII-A groups ?
(B)	Mention the properties of beryllium in which it differs from its own family members.
Q.6-(A)	Write a brief note on:
(i)	Disproportionation reactions of Chlorine.
(ii)	$I_2O_5$ preparation and one reaction
(B)	Define paper. Explain the digestion process in detail.
Q.7-(A)	What is isomerism ? Discuss any three types of structured isomerism.
(B)	Discuss the atomic orbital treatment to explain the structure of benzene.
Q.8-(A)	Write reaction of $HC \equiv CH$ with
(i)	$H_2O$ in the presence of $H_2SO_4 / HgSO_4$
(ii)	Strong alkaline $KMnO_4$
(B)	Discuss in detail the mechanism of nucleophilic substitution unimolecular ( $S_N1$ )
Q.9-(A)	Explain Cannizzaro's reaction with mechanism. Which aldehydes give this reaction ?
(B)	How are carbonylic acids prepared from esters and alkenes ?

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