

DAK-GI-12-18

(12th CLASS – 12018)

CHEMISTRY, NEW COURSE

GROUP FIRST

(ACADEMIC SESSION: 2015- 2017 to 2016-2018)

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 mark in that question.

QUESTION NO. 1

- 1 Mark the correct statement
(A) Na^+ is smaller than Na atom (B) Na^+ is larger than Na atom
(C) Cl^- is smaller than Cl atom (D) Cl^- ion and Cl atom are equal in size
- 2 In the Down's cell, CaCl_2 is added to NaCl
(A) Increase the solubility (B) Increase the dissociation
(C) Increase the conductivity (D) To lower its melting point
- 3 The solution of the acid used for seasoning of food is
(A) Formic acid (B) Benzoic acid (C) Acetic acid (D) Butanoic acid
- 4 The benzene molecule contains
(A) Three double bonds (B) Two double bonds
(C) One double bond (D) Delocalized π electron charge
- 5 For which mechanism, the first step involved is the same
(A) E_1 and E_2 (B) E_2 and SN_2 (C) SN_1 and E_2 (D) E_1 and SN_1
- 6 Hydrogen bond is the strongest between the molecules of:
(A) HF (B) HCl (C) HBr (D) HI
- 7 A single chloride free radical destroys how many ozone molecules
(A) 100 (B) 100,000 (C) 1000 (D) 10
- 8 Laughing gas is chemically
(A) NO (B) N_2O (C) NO_2 (D) N_2O_4
- 9 Linear shape is associated with which type of hybridization?
(A) sp (B) sp^2 (C) sp^3 (D) dsp^2
- 10 Cannizzaro's reaction is not given by
(A) Formaldehyde (B) Acetaldehyde (C) Benzaldehyde (D) Tri-methyl acetaldehyde
- 11 Synthetic rubber is made by the polymerization of
(A) Chloroprene (B) Chloroform (C) Acetylene (D) Di-vinyl Acetylene
- 12 Tincal is a mineral of
(A) Al (B) B (C) Si (D) C
- 13 Which one of these polymers is an example of addition polymer?
(A) Nylon 6,6 (B) Polystyrene (C) Terylene (D) Epoxy resin
- 14 Which one is non-typical transition element?
(A) Cr (B) Mn (C) Zn (D) Fe
- 15 Methyl alcohol is not used as
(A) as a solvent (B) as an anti-freezing agent (C) as a substitute for petrol
(D) for denaturing of ethyl alcohol
- 16 How many zones through which the charge passes in a rotary kiln?
(A) 4 (B) 3 (C) 2 (D) 5
- 17 The pH of unpolluted rain water should be
(A) 5.6 (B) 7.0 (C) 4.8 (D) 3.2

SECTION-I**QUESTION NO. 2 Write short answers any Eight (8) questions of the following**

16

1	Why the basicity of IIA group metal oxides increases on descending a group of Periodic Table ?
2	Why diamond is non-conductor and graphite is fairly a good conductor of electricity?
3	Give the reactions of Mg metal with (a) N ₂ (b) H ₂ O at 100 °C
4	Why are liquid silicones preferred over ordinary organic lubricants ?
5	Why is CO ₂ a gas at room temperature while SiO ₂ solid.
6	Why semiconductors conduct electricity better than insulator?
7	Why is SO ₃ dissolved in H ₂ SO ₄ and not in water (H ₂ O) in contact process?
8	NO ₂ is a strong oxidizing agent .Prove the truth of this statement giving two examples.
9	How do you justify that N ₂ O is supporter of combustion , give two examples.
10	What is meant by ecosystem?
11	What are primary pollutants? Give at least two examples.
12	Define the term octane number. How octane number of gasoline is improved?

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

16

1	Define paramagnetism? Which two transition metal ions have strongest paramagnetic behavior?
2	Define the term ligand with two examples?
3	How is cis-2-Butene prepared from an alkyne? Give its chemical reaction.
4	State Markonikov's rule with an example?
5	How will you distinguished chemically between toluene and benzene.
6	How is a Grignard's Reagent converted into 1-propanol and 2- propanol?
7	How does ethyl alcohol react with H ₂ SO ₄ in two different ways?
8	How is phenol prepared by Dow 's method?
9	How is lactic acid prepared from an aldehyde?
10	Write a reaction which is used to protect aldehyde group against alkaline oxidizing agent?
11	Write the structural formulae of these compounds (a) Phthalic acid (b) tartaric acid
12	How is acetamide prepared from acetic acid? Give its reaction mechanism.

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

12

1	What is the chemical nature of enzymes?
2	What is meant by rancidity of fats or oils?
3	Write structural formula of cholesterol.
4	What are clinkers?
5	Write down four qualities of a good fertilizer.
6	What are the prospects of paper industry in Pakistan?
7	What is "Iodized salt"?
8	Write two uses of helium.
9	Why is HF weaker acid than HCl ?

SECTION-II

8 x 3 = 24

Note: Attempt any Three questions from this section

5-(A)	Define ionization energy. Give an example. How does it vary in groups and periods in Periodic Table ?
(B)	Describe the commercial preparation of sodium hydroxide by Diaphragm cell with diagram
6-(A)	Prepare KMnO ₄ by Stadelers process and Electrolytic oxidation process.
(B)	What are carbohydrates and how are they classified?
7-(A)	Explain Stability of Benzene.
(B)	Explain classification of organic compounds on the base of carbon skeleton.
8-(A)	Write down structural formulae for the products formed when 1-butene reacts with (i) Cold dil. KMnO ₄ / OH ⁻ (ii) HBr (iii) O ₂ in the presence of Ag ₂ O (iv) HOCl
(B)	How are monohydric alcohols classified? Write preparation of ethyl alcohol from molasses.
9-(A)	Give the reactions of ethyl magnesium bromide with the followings (i) CO ₂ (ii) C ₆ H ₅ Cl (iii) HCHO (iv) (CH ₃) ₂ CO
(B)	Give four uses for each of formaldehyde and acetaldehyde.