

Half Yearly Examination 2022-23

Class -12th

Subject - Chemistry

Time :- 3:00 hrs

M.M.70

Instruction

- (1) Question 1 to 4 are objective type question, carries 28 marks [each que. carries 7 marks]
- (2) Question No 5 to 12, each question carries 2 marks
- (3) Question No 13 to 16, each question carries 3 marks
- (4) Question No 17 carry 4 marks
- (5) Question No 18 and 19 carries 5 marks
- (6) Internal choice is given in every question from ques. No 5 to 19

Q. 1 Choose the correct option (7)

- (i) The number of moles of solute present in 1000g of solvent is called
 - (a) Molarity
 - (b) Molality
 - (c) Normality
 - (d) Formality
- (ii) Reason of Lanthanide contraction is
 - (a) Negligible screening effect of orbital
 - (b) Increasing Nuclear charge
 - (c) Decreasing nuclear charge
 - (d) Decreasing screening effect
- (iii) Oxidation state of Fe in $K_4[Fe(CN)_6]$ is :
 - (a) + 3
 - (b) + 2
 - (c) + 8
 - (d) + 5
- (iv) Which is identified by Lucas reagent
 - (a) Phenol
 - (b) Ether
 - (c) Aldehyde
 - (d) Alcohol
- (v) A compound which gives oily nitrosoamine with nitrous acid at low temperature
 - (a) Methyl amine
 - (b) Dimethyl amine
 - (c) Trimethyl amine
 - (d) Triethyl amine
- (vi) In human body carbohydrate is stored:
 - (a) In form of Glucose
 - (b) In form of glycogen
 - (c) In form of starch
 - (d) In form of fructose
- (vii) Which is not found in RNA
 - (a) Thymine
 - (b) Uracil
 - (c) Adenine
 - (d) Guanine

- Q. 2 Fill in the Blanks (7)**
- (i) 1 Faraday is equal to coulomb
 - (ii) Fast reactions are completed in less than seconds
 - (iii) General electronic configuration of inner transition element is
 - (iv) B.H.S. is an insecticide whose commercial name is
 - (v) All aliphatic amines are more than ammonia
 - (vi) Protein is a polymer of
 - (vii) $\text{cis} [\text{Pt}(\text{NH}_3)_2 \text{Cl}_2]$ complex is used as an agent

- Q. 3 Match the following (7)**
- | A | B |
|-----------------------|-------------------------------|
| (i) Soda water | (a) Ethyl alcohol |
| (ii) S.H.E. | (b) Explosive |
| (iii) Coin metals | (c) Solution of gas in liquid |
| (iv) Spirit of wine | (d) As a poisonous in wars |
| (v) T.N.B. and T.N.T. | (e) Zero Volt |
| (vi) Hair fall | (f) Cu, Ag and Au |
| (vii) Chlorophyllin | (g) Biotin |

- Q. 4 Answer in one word (7)**
- (i) Write Arrhenius equation ?
 - (ii) How many unpaired electrons in Fe^{3+} ?
 - (iii) Name the organometallic compound which is used as an antiknock compound in petrol ?
 - (iv) Which is formed on burning other ?
 - (v) What is vinegar ?
 - (vi) Write formula of Hinsberg's reagent ?
 - (vii) Which protein is helpful for clotting of blood ?

- Q. 5 Define Mole fraction ? (2)**

OR

Define azeotropes with 2 examples ?

- Q. 6 Write the Faraday's first law of electrolysis ? (2)**

OR

Write ohm's law ?

- Q. 7 From the rate expressions, determine order of reaction and their units: (2)**
- (i) $\text{Rate} = K [\text{NO}]^2$
 - (ii) $\text{Rate} = K [\text{C}_2\text{H}_5\text{OH}]$

OR

Define instantaneous rate of reaction ?

Q. 8 Define effective atomic number (EAN) with one example ? (2)

OR

Write formula of each of the following IUPAC names of co-ordination compounds :

- (i) Tetrahydroxozincate (II)
- (ii) Potassium tetrachlorido palladate (II)

Q. 9 Define chelates with example ? (2)

OR

Give IUPAC name of the following

- (i) $[\text{HgI}_4]^{2-}$
- (ii) $\text{K}[\text{Ag}(\text{CN})_2]$

Q. 10 What is Helf- Volhard - Zelinsky reaction ? (2)

OR

Why Ketones are less reactive than aldehyde ?

Q. 11 Ethyl amine is more basic than ammonia ? (2)

OR

Write mustard oil reaction ?

Q. 12 Write any 2 difference between Globular and fibrous protein ? (2)

OR

What is DNA finger printing ? Why it is important ?

Q. 13 4 gm urea dissolved in 100 gm of water The depression in freezing point was found to be 1.24°C calculate the molecular mass of urea? (3)

OR

What is elevation in boiling point ?

Derive an expression for it and its molecular mass determination ?

Q. 14 Write any 3 factor which affects rate of reaction ? (3)

OR

Prove that half life period of zero order reaction is proportional to initial concentration of reactant.

Q. 15 Write any 3 difference between d- and f- block elements ? (3)

OR

Give reason

- (i) The Transition metals generally form coloured compounds.
- (ii) Transition metals exhibit variable oxidation state.

Q. 16 Distinguish between 1^o, 2^o and 3^o alcohol by Lucas test ? (3)

OR

Give reaction :-

- (i) Reimer - Tiemann reaction
- (ii) Kolbe's -Schmidt's reaction

Q. 17 How does nucleophilic substitution reaction occur in alkyl halide ?
Give its mechanism ? (4)

OR

What is β elimination reaction ? Mention Saytzeff's rule associated with.

Q. 18 What is rusting of Iron? describe electro chemical theory of rusting?(5)

OR

Derive Nernst equation for Daniel cell ?

Q. 19 Give quick vinegar Method of preparation of acetic acid, Write its 2 properties and 2 uses ? (5)

OR

Write down the following reactions

- (i) Rosenmund reaction
- (ii) Etard's reaction
- (iii) Gattermann - Koch synthesis
- (iv) Cannizzaro Reaction
- (v) Perkin's reaction