

SECTION - A (Multiple Choice Questions)

Q.1 Choose the correct answer for each from the given options:

1. Albumins are the type of _____.
(a) Conjugated Proteins (b) Simple Protein
(c) Derived Proteins (d) Monosaccharides
2. Which of the following polymer is used in the manufacture of chewing gums?
(a) Bakelite (b) PVC (c) PVA (d) Poly ethylene
3. Which of the following is an isotope of hydrogen?
(a) Protium (b) Watergas
(c) Atomic Hydrogen (d) Ionic hybride
4. Which of the following element have variable oxidation states?
(a) Na (b) F (c) Be (d) Mn
5. Hydrogen shows partial resemblance with the elements of _____ groups.
(a) IA, IIA and IIIA (b) IA, IVA and VIIA
(c) IIIA, IVA and VIIA (d) IA, IIA and VIIIA
6. Formula of plaster of paris is _____.
(a) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ (b) $\text{CaSO}_4 \cdot 3\text{H}_2\text{O}$
(c) $\text{CaSO}_4 \cdot \frac{1}{2} \text{H}_2\text{O}$ (d) CaSO_4
7. Which method is used for the purification of Bauxite containing excess of Fe_2O_3 ?
(a) Serpek's Method (b) Bacyers Method
(c) Hall's Method (d) Contact Method
8. Which of the following compounds is homocyclic?
(a) Furan (b) Pyridine (c) Benzene (d) Thiophene
9. Elements of the same period have same number of _____.
(a) Protons (b) Electrons (c) Neutrons (d) Shells
10. Isomers have different _____.
(a) Molecular Formulae (b) Crytalline Structure
(c) Structural Formulae (d) Refractive Index

11. The first four members of alkane series are _____.
(a) All liquids (b) All gases
(c) Two liquids and two gases (d) Three liquids and one gas
12. The general formula of Grignard's reagents is _____.
(a) $R-X$ (b) R_2CH-X (c) $R-Mg-X$ (d) R_3CX
13. Which of the following give addition reactions?
(a) CH_3OH (b) $HCHO$ (c) CH_4 (d) CH_3Cl
14. Which type of compounds will be formed by treating Grignard's reagent with Ketones?
(a) Primary Alcohols (b) Secondary Alcohols
(c) Tertiary Alcohols (d) Alkenes
15. An organic compound containing carbonyl group and hydroxyl group is known as _____.
(a) Alcohol (b) Aldehyde (c) Ketone (d) Carboxylic Acid
16. Which one of the following gases shows acidic properties?
(a) Acetylene (b) Methane (c) Ethane (d) Butane
17. The catalyst used in hydrogenation reaction is _____.
(a) $KMnO_4$ (b) $K_2Cr_2O_7$ (c) $Ni/Pt/Pd$ (d) V_2O_5
18. Which of the following is a polysaccharide?
(a) Glucose (b) Fructose (c) Maltose (d) Cellulose
19. Mendeleev was a _____ chemist.
(a) British (b) German (c) Russian (d) French
20. Which of the following contains ionic bonds?
(a) CH_4 (b) NaH (c) H_2O (d) NH_3
21. $NaOH + NH_4Cl \longrightarrow$
(a) $NH_4OH + NaCl$ (b) $NH_3 + H_2O + NaCl$
(c) $NaH + H_2O$ (d) Both (a) and (b)

22. Why Graphite conducts electricity and Dimond does not?
(a) In Graphite each carbon possess one single electron
(b) In Graphite each carbon possess all paired electrons
(c) Due to black colour of graphite
(d) Because graphite is soft one
23. In which of the following the complex ion is an anion?
(a) $[\text{Cr}(\text{NH}_3)_4\text{Cl}_2]\text{Cl}$ (b) $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$
(c) $\text{K}_3[\text{Co}(\text{NO}_2)_6]$ (d) $[\text{Pt}(\text{NH}_3)_2\text{Cl}_4]$
24. Bituminous coal on _____ produces coke.
(a) Destructive Distillation (b) Fractional Distillation
(c) Cracking (d) Polymerization
25. Which of the following reactions of benzene is not an electrophilic substitution?
(a) Nitration (b) Sulphonation
(c) Hydrogenation (d) Friedal - craft's reactions
26. Hybridization of carbon in acetylene is _____.
(a) SP^3 (b) SP (c) SP^2 (d) Both (a) and (b)
27. The solvent which favours SN_1 reaction is _____.
(a) Polar (b) Organic (c) Non Polar (d) Both (b) and (c)
28. Ketones result by the oxidation of _____.
(a) Primary Alcohols (b) Secondary Alcohols
(c) Tertiary Alcohols (d) Both (a) and (c)
29. The product obtained by the fermentation of Glucose is _____.
(a) $\text{C}_2\text{H}_5\text{OH} + \text{CO}_2$ (b) $\text{CH}_3\text{OH} + \text{CO}_2$
(c) $\text{CO} + \text{H}_2\text{O}$ (d) $\text{NaCl} + \text{H}_2\text{O}$
30. Which of the following vitamins are water soluble?
(a) A, B, C, D (b) A, D, C, K (c) D, C, K (d) B and C
31. Which of the following is an electrophile?
(a) OH^- (b) CH_3^- (c) NO_2^+ (d) Both (a) and (b)
32. Which of the following is not a ligand?
(a) CH_4 (b) H_2O (c) NH_3 (d) $\text{NH}_2\text{CH}_2\text{CH}_2\text{NH}_2$

SECTION - B (SHORT ANSWER)

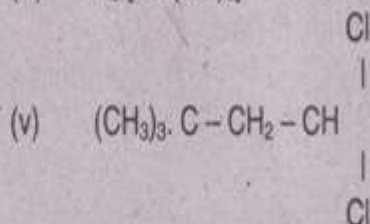
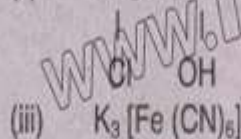
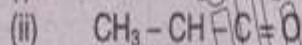
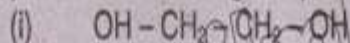
Note: Answer any **SEVEN** of the following questions. Each question carries **15** marks.

- Q.2 What is formaldehyde? How can it be prepared?
- Q.3 What do you know about hydrides? Define any two types.
- Q.4 Explain why:
- (i) Cl^- ion is larger in size than Cl atom
 - (ii) HI is more acidic than HBr
 - (iii) Ionic radius of Mg is smaller than that of Na
 - (iv) HNO_3 is strong oxidizing agent
 - (v) d – block elements form coloured compounds
- Q.5 Define amino acids with examples.
- Q.6 How HNO_3 is prepared?
- Q.7 Define plastics with examples.
- Q.8 Discuss E_1 and E_2 reactions with examples.
- Q.9 Give any two methods of preparation of CH_4 .
- Q.10 Discuss any two chemical reactions of acetic acid.
- Q.11 What do you know about the structure of acetylene?

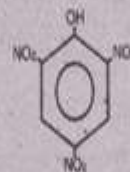
SECTION - C (DESCRIPTIVE ANSWER)

Note: Answer any TWO of the following questions. Each question carries 09 (5 + 4) marks.

Q.12 (a) Name the following compounds by I.U.P.A.C system.



(v)



(b) Draw the structure of the following.

(i) Methyl Acetate

(ii) Catechol

(iii) Methoxy Ethane

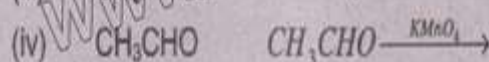
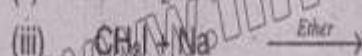
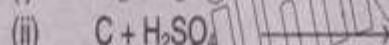
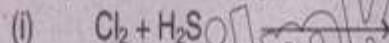
(iv) Tertiary Butyl Alcohol

Q.13 (a) How alumina is purified from bauxite? Explain with examples.

(b) Discuss the structure of ethane.

Q.14 (a) How caustic soda is prepared by castner - keller's process? Discuss the merits and demerits of the method.

(b) Complete the following reactions:



2021-2022

CHEMISTRY

Annual Examination

Section-A

Multiple Choice Questions (MCQs)

- Q.1 Choose the correct answer for each from the given options:
- (1) The formula of chile salt peter is:
 (a) NaNO_3 (b) NH_4NO_3 (c) KNO_3 (d) AgNO_3
- (2) Which one is secondary Alkylhalide:
 (a) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{Cl}$ (b) $\text{CH}_3 - \overset{\text{CH}_3}{\underset{\text{H}}{\text{C}}} - \text{Cl}$ (c) $\text{CH}_3 - \overset{\text{CH}_3}{\underset{\text{CH}_3}{\text{C}}} - \text{Cl}$
 (d) None of these
- (3) The reaction in which single is converted in to double or triple bond is known as _____.
 (a) Addition reaction (b) Substitution reaction
 (c) Elimination reaction (d) Re-arrangement reaction
- (4) The process of loss of oxygen from a substance or addition of Hydrogen is called _____.
 (a) Oxidation (b) Reduction (c) Hydrogenation (d) None of these
- (5) Greater is the electro negativity of an element, stronger is the _____ character of its acid.
 (a) Acid (b) Basic (c) Both (a) and (b) (d) None of these
- (6) Urea was prepared in _____.
 (a) 1828 (b) 1928 (c) 1840 (d) None of these
- (7) Aldehyde and Ketones we commonly referred to as _____.
 (a) Carbonyl compound (b) Penols (c) Ethers (d) None of these
- (8) In the electrolysis of NaCl _____ occurs at cathodes:
 (a) Oxidation (b) Reduction (c) Redox reaction (d) None of these
- (9) Which of the following element silicates are used in the manufacture of _____.
 (a) Ca (b) Cu (c) Cr (d) None of these

- (11) Which one of following is mono saccharine?
 (a) Maltase's (b) Sucrose (c) Gelatos (d) Cellulose
- (12) Presence of double bond in a compound is the sign of _____.
 (a) Saturation (b) un-saturation (c) substitution
 (d) None of these
- (13) _____ forms polymeric hydrides.
 (a) Na and Li (b) B and Be (c) Be and Mg (d) Mg and Ca
- (14) Copper sulphate penta hydrated is also called:
 (a) Green Viriol (b) Black vitriol (c) Blue vitriol (d) All of these
- (15) Alkali metal are the element of _____.
 (a) Group IIIA (b) Group IIA (c) Group IA (d) Group VIIIA
- (16) In Latin, the word petroleum means _____.
 (a) Rock oil (b) Cracked oil (c) Rook oil (d) All of these
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- (17) IUPAC name of $\text{CH}_3 - \text{C} - \text{CH}_3$ is:
 (a) Di-methyl ketone (b) Acetone (c) 2-propanone (d) All of these
- (18) Third period of modern periodic table contain:
 (a) 19 elements (b) 2 elements (c) 32 elements (d) 8 elements
- (19) Natural gas contain methane gas (CH_4) about _____.
 (a) 98.5% (b) 94.60% (c) 32 elements (d) All of these
- (20) Which one is oxonium ion:
 (a) $\text{R}-\text{O}^+-\text{R}$ (b) H^3C^+ (c) $\text{O}-\text{H}$ (d) None of these
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- (21) De hydro halogenations is the reaction of:
 (a) Addition of H_2O (b) Elimination of HX
 (c) Addition of HX (d) Elimination
- (22) Hydrides which have salt like character are known as _____.
 (a) Metallic hydride (b) Complex hydride (c) Ionic hydride
 (d) Polymeric hydride
- (23) Elements of sub group IIIA to VIIIA (Except He) are known as _____.
 (a) s-block (b) p-block (c) d-block (d) f-block
- (24) Ketones are prepared by the oxidation of _____.
 (a) Primary Alcohol (b) Secondary Alcohol (c) Tertiary alcohol
 (d) All of these

Benzene was first isolated by Michael Faraday in _____

- (a) 1845 (b) 1825 (c) 1945 (d) 1925

Tertiary carbon bonded directly to _____

- (a) 2 hydrogens (b) 3-carbons (c) 2 carbons (d) 4 carbons

Hydrides of group IIIA & IVA are _____

- (a) Neutral (b) Acidic (c) Basic (d) None of these

Alkyl-halides undergoes _____

- (a) Electrophilic substitution reaction (b) Electrophilic and addition reaction
(c) Nucleophilic substitution reaction (d) Nucleophilic addition reaction

_____ is the largest period in the periodic table.

- (a) 4th period (b) 5th period (c) 6th period (d) 7th period

(30) Ruby is the oxide of _____

- (a) Iron (b) Copper (c) Propylene (d) None of these

(31) The systematic (IUPAC) name of tert-butyl bromide is _____

- (a) Tri Bromo Butane (b) 1-Bromo Butane
(c) 1-bromo-1, 1 dimethyl ethane (d) 2-Bromo-2-methyl propane

(32) Polyethylene is the polymer of _____

- (a) Ethylene (b) Acetylene (c) Propylene (d) None of these

(33) The vertical columns of element in the modern periodic table are called:

- (a) Periods (b) Blocks (c) Groups (d) Families

(34) The color of chlorine (Cl_2) gas is:

- (a) Red (b) Blue (c) Yellow (d) Greenish yellow

- (35) The valence shell of hydrogen is half filled like that of:
(a) Alkali metals (b) Carbon family (c) Halogen family (d) Noble gases
- (36) Alkyl halide are classified into:
(a) 2 types (b) 3 types (c) 4 types (d) 5 types
- (37) Formula of Iodoform is:
(a) CH_3I (b) CH_2I_2 (c) CHI_3 (d) CI_4
- (38) Mustard gas is prepared from:
(a) Ethene (b) Ethyne (c) Ethane (d) Benzene
- (39) $\text{C}_{n-1}\text{H}_{2n}$ is the general formula of:
(a) Alkane (b) Alkyne (c) Alkene (d) All of these
- (40) Which of the following metal is called self protected out by:
(a) Fe (b) Cu (c) Al (d) Ag
- (41) The industrial preparation of Nitric acid is carried out by:
(a) Contact process (b) Cartner – Kelliner process
(c) Down's Process (d) Ostward's method
- (42) The bond energy of Hydrogen molecule is:
(a) 102 K cal/mol (b) 104 K.cal/mol (c) 105 K.cal/mol (d) 106 K.cal/mol
- (43) The first known organic compound synthesis in the laboratory is:
(a) Benzene (b) Acetic acid (c) Urea (d) Ethane