

CHEMISTRY 2021

(AS PER CONDENSED SYLLABUS)

TIME: 2 Hours

(85 Marks)

NOTE:

i) This section consists of 43 part questions and all are to be answered. Each question carries ONE marks.

ii) Do not copy the part questions in your answer book. Write only the answer in full against the proper number of the question and its part.

SECTION 'A' (Multiple Choice Questions)(43)

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

(i) Which pair of elements belongs to same group in the periodic table:

*Mg and S *O and Br *Na and Al *C and Si ✓

(ii) Hydride ion and Helium atom have the same:

* Number of protons *Number of neutrons
* Valency *Number of electrons ✓

(iii) The valence shell electronic configuration of Halogen family is:

* ns^1 * ns^2, np^6 * $ns^2, (n-1)d^5$ * ns^2, np^5 ✓

(iv) Dolomite is a carbonate of:

* Ca and Ba *Li and Na * Mg and Al *Mg and Ca ✓

(v) Nitric acid is frequently transported in a container made of:

*Al ✓ *Cu *Zn *Ag

(vi) The mixture of Aluminium powder and Aluminium nitrate is called:

*Gun powder *Ammonal ✓ *Urea *Tincal

(vii) 'A' is the element of IA group while 'B' belongs to VA group. When 'A' reacts with 'B' they:

*AB *AB₃ *A₁B₂ ✓ *A₂B₃

(viii) Diaspore is an ore of:

*Copper *Zinc *Iron *Aluminium ✓

(ix) Metallic character of p-block elements depends upon electron population of outer most shell and:

*Ionization potential ✓ *Shielding effect
*Electronegativity *Hydration energy

(x) Which of the following ligand is chelating agent:

*EDTA ✓ *CN⁻¹ *NH₃ *F⁻¹

(xi) The formula of chromite ore is:

*CrO₂Cl₂ *K₂Cr₂O₃ *FeOCr₂O₃ ✓ *K₂CrO₃

(xii) The Coordination number of Cobalt in [Co(en)₂Cl₂]Cl is:

*3 *4 *6 ✓ *8

(xiii) The element which is present in group IV-A and 3rd period, its atomic number is:

*15 *14 ✓ *13 *6

(xiv) Oxidation state of oxygen in super oxides is:

*-2 *+2 * $-\frac{1}{2}$ ✓ *1

(xv) 'Li' is powerful reducing agent due to its large value for:

*Ionization potential *Hydration enthalpy ✓

*Electron Affinity *Electronegativity

(xvi) Aluminium does not react with:

*H₂SO₄ *H₃PO₄ *HNO₃ ✓ *HCl

(xvii) The ligands which form ring structure with central atom is:

*Chelate ✓ *Co-ordination sphere

*Cyclic ligand *Polydentate ligand

(xviii) Aluminium bronze contains:

*10% Al and 90% Cu ✓ *5% Al and 95% Cu

*20% Al and 80% Cu *90% Al and 10% Cu

(xix) The number of unpaired electrons in ferrous ion is:

*2 *3 *4 ✓ *6

(xx) Coating of Zinc on iron is called:

*Surface coating *Electroplating

*Galvanizing ✓ *Sheardizing

(xxi) On jumping from eg to t_{2g} orbitals electron radiate energy in this region of spectrum:

*ultraviolet *visible ✓ *infrared *far infrared

(xxii) Alkanes are also called:

*olefins *paraffins ✓ *proteins *acetylene

(xxiii) Calcium Carbide on hydrolysis forms:

*methane *ethane *benzene *acetylene ✓

(xxiv) This gas is used in welding:

*Methane *Ethane *Ethene *Ethyne ✓

(xxv) Which of the following gives electrophilic substitution reaction:

*Benzene ✓ *Formaldehyde *Ethanol *Ethyne

(xxvi) This is the most stable carbonium ion:

*CH₃ *RCH₂ *R₂CH *R₃C ✓

(xxvii) A dipolar charged but overall electrically neutral ion is called:

*Carbinium ion *Zwitterion ✓

*Oxonium ion *Carbanion ion

(xxviii) This imparts green colour to glass:

*Cr₂O₃ ✓ *CuO *CoO *MnO₂

(xxix) Glucose and Fructose:

----- CHEMISTRY -----

*Position Isomers *Chain Isomers

*Functional Group Isomers ✓ *Metamers

(xxx) Which one of the following is Acidic Amino Acid:

*Glycine *Alanine *Arginine *Aspartic acid ✓

(xxxi) Wood spirit is the common name of:

*Ethanol *Methanol ✓ *Starch *Sugar

(xxxii) Which one of the following is a heterocyclic compound:

*Pyridine ✓ *Phenol *Benzene *Methane

(xxxiii) The animal starch is:

*Cellulose *Glycogen ✓ *Amylose *Glucose

(xxxiv) The compound obtained by the dry distillation of calcium formate is:

*Methanol *Methanal ✓ *Methane *Acetone

(xxxv) Another name of fructose is:

*d(+) Glucose *Levulose ✓

*Oligosaccharide *Galactose

(xxxvi) Bakelite is a polymer of phenol and:

*Formaldehyde ✓ *Ethanol *Ethene *Benzene

(xxxvii) Dehydration of Ethanol produces:

*Ethyne *Ethane *Ethene ✓ *Water gas

(xxxviii) The hybridization in carbonyl group is:

*sp *sp² ✓ *sp³ *dsp²

(xxxix) Polyhydric aldehydes or ketones are known as:

*Carbohydrates ✓ *Protein *Enzymes *Glass

(xl) The number of acidic hydrogen present in 1-butyne:

*1 ✓ *2 *3 *4

(xli) Which one of the following meta directing group:

*-NH₂ * -CH₃ * -NO₂ ✓ * -OH

(xlii) Glyoxal is formed by ozonolysis of:

*ethene *benzene ✓ *acetone *acetylene

(xliii) When CO₂ reacts with Grignard reagent it give:

*Alcohol *Carboxylic acid ✓ *Alkane *Ester