

**SAMPLE QUESTIONS FOR SEMESTER VI EXAMINATIONS**

**ACADEMIC YEAR 2019-20**

**CLASS-T.Y.B.Sc**

**SUBJECT- CHEMISTRY-**

**PAPER-II**

**USCH602**

1	The bonding in coordination compounds as per Crystal field theory is ----- a) Electrovalent b) Covalent c) Coordinate d) Hydrogen Bonding	1
2	NH <sub>3</sub> ligand will be considered to be a ----- as per the Crystal field theory. a) Point negative charge b) Point positive charge c) Point dipole d) Acidic ligand	1
3	Oxalate ligand will be considered to be a ----- as per the Crystal field theory. a) Point negative charge b) Point dipole c) Acidic ligand d) Point positive charge	1
4	In a square planar complex the d orbitals of a metal are split in to ----- levels a) 2 b) 4 c) 3 d) 5	1
5	CFSE for an octahedral complex with a metal ion with d <sup>5</sup> and d <sup>4</sup> configuration and weak field ligand is ----- and ---- ----- a) 0Dq <b>and</b> - 6Dq b) 4 Dq <b>and</b> -6Dq c) 12Dq +1P <b>and</b> -6Dq d) 0Dq +2P <b>and</b> -6Dq +2P	2
6	The 10Dq value ----- due to ligand to metal π interactions a) Decreases b) Increases c) Remains same d) Affects CFSE	1
7	The following electronic transitions are allowed as per Laporte Orbital selection rule a) g → g b) u → u c) g → u d) d → d	1
8	The most stable complex of Cu <sup>2+</sup> is ----- a) [Cu(NH <sub>3</sub> ) <sub>4</sub> ] <sup>2+</sup> b) [Cu(H <sub>2</sub> O) <sub>4</sub> ] <sup>2+</sup> c) [Cu(en) <sub>2</sub> ] <sup>2+</sup> d) [CuCl <sub>4</sub> ] <sup>2-</sup>	1

9	The number of microstates for $Ti^{2+}$ ion is ----- a) 15 b) 45 c) 60 d) 75	2
10	The intense purple color of $[MnO_4]^-$ is due to ----- transitions a) MLCT b) LMCT c) LLCT d) d-d	1
11	Ferrocene is oxidized by -----to obtain blue ferricenium ion. a) Dil $H_2SO_4$ b) Dil $HNO_3$ c) DIL HCl d) Dil $CH_3COOH$	1
12	Heterogenous catalysts are characterized by ----- and --- ----- a) High Temperature conditions and ease of recycling catalyst b) High Temperature conditions and inability of recycling catalyst c) Low temperature condition and ease of recycling catalyst d) Low temperature and inability of recycling catalyst	2
13	The reaction of $Fe(CO)_5$ with $I_2$ is an example of ----- a) Reductive Elimination b) Insertion Reaction c) Oxidative addition d) Hydrolysis	1
14	The oxidation state of Rhodium in Wilkinson's catalyst is ----- ----- a) +1 b) +3 c) +5 d) +6	1
15	$Zn(C_2H_5)_2$ is an example of ----- a) Ionic Organometallic compound b) $\sigma$ -bonded covalent Organometallic compound c) Multicentred electron deficient Organometallic compound d) Simple Ionic compound	1
16	Vapour Phase refining method can be used for the purification of ----- ----- a) Fe b) Cu c) Ag d) Pb	1
17	The electrolyte used in the electrorefining of Copper is a solution of ----- a) $CuSO_4 + H_2SO_4$ b) $CuSO_4 + HNO_3$ c) $CuSO_4 + HCl$ d) $CuSO_4 + HF$	1

18	-----among the Noble gases does not form clathrate compounds. a) Ne b) Ar c) Kr d) Xe	1
19	The reduction of oxygen to water in plant systems is catalysed by----- a) Ascorbic Acid Oxidase b) Galactose Oxidase c) Ceruplasmin d) Myoglobin	1
20	The hybridization undergone by Fe in Ferrocene is ----- -- a) $d^2sp^3$ b) $sp^3$ c) $dsp^2$ d) $d^3sp^3$	