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SUBJECT CODE NO:- B-2009
FACULTY OF SCIENCE & TECHNOLOGY
B.Sc. T.Y (Sem-VI)
Examination November/December- 2022
Chemistry Paper –XVI
(Inorganic Chemistry)

[Time: 1:30 Hours]

[Max. Marks:50]

Please check whether you have got the right question paper.

- N.B
- i) Attempt all the Questions.
 - ii) Draw neat labeled diagram wherever necessary.
- Q.1
- a) Give any two methods of preparation, properties and uses of organolithium compounds. 10
 - b) Describe the Assumptions of crystal field theory. 10
- OR**
- c) Discuss the splitting of d-orbitals in square planar complexes. 10
 - d) Explain metalloporphyrins with special reference to myoglobin. 10
- Q.2
- a) Explain Orgel energy diagram for d⁷ configuration in octahedral complexes. 10
 - b) Explain: 10
 - i) Laporte selection rule
 - ii) Thin layer chromatography
- OR**
- c) Write short notes on any four of the following. 20
 - 1) Biological role of sodium
 - 2) Classification of Chromatography
 - 3) Limitations of VBT
 - 4) Types of electronic transitions
 - 5) Properties and uses of organomercury compounds
 - 6) Spectrochemical series
- Q.3 Multiple choice questions. 10
- 1) The energy of eg orbital in tetrahedral complexes decrease by
 - a) - 6 Dq
 - b) + 4 Dq
 - c) + 6 Dq
 - d) - 4 Dq

- 2) The weak field ligand is
a) Cl^- b) CN^- c) NH_3 d) CO
- 3) The ground state term symbol for d^1 system
a) ^3F b) ^4F c) ^2D d) ^6S
- 4) The colour of aqueous solution of $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ ion is
a) blue b) green c) red d) purple
- 5) The example of covalent organometallic compound is
a) $\text{Pb}(\text{C}_2\text{H}_5)_2$ b) $(\text{CH}_3)_2\text{Mg}$ c) $\text{Fe}(\text{CO})_5$ d) All of these
- 6) The IUPAC name of $\text{C}_2\text{H}_5\text{Na}$ is
a) Ethyl methyl sodium b) Diethyl Sodium
c) Ethyl sodium d) Sodium ethyl
- 7) The $\text{Na}^+ - \text{K}^+$ pump work on
a) Lungs b) Cell membrane c) Kidney d) Heart
- 8) In nitrogen fixation enzyme acting as catalyst is
a) Nitrogenase b) Amylase c) Ferredoxins d) None
- 9) $\Delta S = 0$ is
a) spin allowed b) laporte allowed c) spin forbidden d) None
- 10) In ascending paper chromatography the mobile phase moves
a) upward direction b) downward direction
c) horizontally d) Same position