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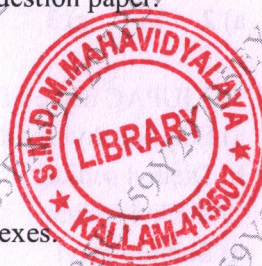
SUBJECT CODE NO: -B-2159
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. Pattern - 2013 (T.Y SEM VI)
Examination November / December 2025
Chemistry Paper -XVI (Inorganic Chemistry)

[Time: 1:30 Hours]**[Max. Marks: 50]**

Please check whether you have got the right question paper.

N. B

- 1) Attempt all questions.
- 2) Draw diagrams wherever necessary.
- 3) Use only a blue or black pen for writing.



Q1 a) Explain the splitting of d-orbitals in tetrahedral complexes. 10

b) Give any two methods of preparation, properties, and uses of organolithium compounds. 10

ORc) Explain the Orgel diagram for d^1 configuration in octahedral complexes. 10d) Explain the following factors affecting on $10 Dq$ parameter 10

- i) Nature of central metal ion
- ii) Nature of ligand

Q2 a) Discuss the principle and technique of Thin Layer Chromatography (TLC). 10

b) Explain in detail Nitrogen Fixation. 10

OR

c) Write short notes on (Any Four) 20

1. Assumptions of CFT
2. R_f value
3. Biological role of sodium
4. Types of electronic transitions
5. Properties and uses of organomercury compounds
6. Spectrochemical series

Q3 Multiple Choice Questions: 10

1. The energy of, eg orbital in octahedral complexes increases by:
a) $-6Dq$ b) $-4Dq$ c) $+6Dq$ d) $+4Dq$
2. The weak field ligand is:
a) Cl^- b) NH_3 c) CO d) CN^-

3. The number of unpaired electrons in Ti^{3+} ion
a) 2 b) 3 c) 1 d) 0
4. The ground state term symbol for d^5 system is:
a) ^6S b) ^2D c) ^3F d) ^4F
5. The number of unpaired electrons in ^2D system is:
a) 2 b) 1 c) 3 d) 0
6. The IUPAC name of CH_3Na is:
a) Ethyl methyl sodium
b) Diethyl sodium
c) Methyl sodium
d) Sodium ethyl
7. Organolithium and formaldehyde interact to give:
a) Primary alcohol b) Secondary alcohol
c) Tertiary alcohol d) All of these
8. The role of myoglobin in biosystem is:
a) Transport oxygen
b) Store oxygen
c) Store CO_2
d) None of these
9. Chromatography is a physical method is used to separate and analyse -----
a) Simple mixtures
b) Complex mixtures
c) Viscous mixtures
d) Metals
10. The mobile phase in chromatography can be:
a) Gas only
b) Liquid only
c) Solid
d) Gas and liquid

