

Total No. of Printed Pages: 2

SUBJECT CODE NO: Y-2159
FACULTY OF SCIENCE AND TECHNOLOGY
B. Sc (PATTERN-2013) (T.Y SEM - VI)
Examination April / May - 2024
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 diagram whenever necessary.
- 3) Use Only blue or black pen for writing.

- Q1**
- | | | |
|----|---|----|
| a) | Explain the splitting of d-orbital in octahedral complexes. | 10 |
| b) | Give any two methods of preparation, properties and uses of organomecury compounds. | 10 |

OR

- | | | |
|----|--|----|
| c) | What is 10 Dq? Discuss the factors affecting on 10 Dq. | 10 |
| d) | Explain electronic Spectra of $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ complexion. | 10 |

- Q2**
- | | | |
|----|---|----|
| a) | Give comparative account between thin layer and paper chromatography. | 10 |
| b) | Explain metalloporphyrins with special reference to haemoglobin. | 10 |

OR

- | | | |
|------|---|----|
| c) | Write a short note on any Four of the Following | 20 |
| i) | limitations of VBT | |
| ii) | Rf value | |
| iii) | Biological role & sodium | |
| iv) | Types & electronic transition | |
| v) | Properties and uses of organo aluminium compounds | |
| vi) | Spectrochemical series | |

- Q3** Multiple choice questions. 10

- | | | |
|----|--|-------------|
| 1) | Give the symmetry symbol for dx^2-y^2 and dz^2 orbitals | |
| a) | t_{2g} | b) e_g |
| c) | a_{1g} | d) t_{1g} |
| 2) | The energy of t_{2g} orbitals in octahedral complexes decreases by | |
| a) | -6 Dq | b) -4 Dq |
| c) | +6 Dq | d) +4 Dq |



- 3) The ground state term symbol for d^5 System
a) 6S b) 2D
c) 3F d) 4F
- 4) The selection rules used for d-d transition
a) Laporte selection rule b) Spin selection rule
c) The orbital rule d) None of these
- 5) The example of metal carbonyl is
a) $[Fe(CO)_5]$ b) $[Co(en)_3]^{3+}$
c) $[Ni(CN)_4]^{2-}$ d) None of these
- 6) Organolithium and Formaldehyde interacts to give
a) Primary alcohol b) Secondary alcohol
c) Tertiary alcohol d) All of the above
- 7) The metal involved in Nitrogen fixation is
a) Si b) Al
c) Mo d) Na
- 8) What are the biological role of Ca metal in non-enzymatic processes?
a) Messenger for hormonal action b) Triggered for muscle contraction
c) Initiation blood clotting d) All of these
- 9) chromatography is a physical method that is used to separate and analyses _____
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

