

Total No. of Printed Pages: 2

**SUBJECT CODE NO: - Y-2161**  
**FACULTY OF SCIENCE AND TECHNOLOGY**  
**B.Sc. (PATTERN-2013) (S.Y SEM IV)**  
**Examination April / May - 2024**  
**Chemistry Paper-X (Inorganic Chemistry)**

[Time: 1:30 Hours]

[Max. Marks:50]

Please check whether you have got the right question paper.

N. B

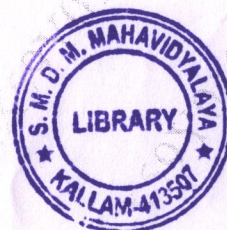
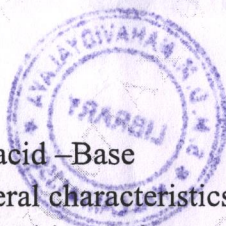
Attempt all questions

- Q1**
- a) Explain the general characteristics features of d- block element 10  
 b) Explain assumption of valence bond theory with suitable example 10
- OR**
- c) Discuss the electronic configuration and oxidation states of lanthanide series 10  
 d) Explain the chemistry of separation of Np and Pu from Uranium 10

- Q2**
- a) Explain Arrhenius and Lewis concept of acid base with suitable example 10  
 b) Discuss the reactions in Non-aqueous solvents with reference to liq  $NH_3$  10

**OR**

- c) Write short notes on 20
- 1) Effective atomic number
  - 2) Lanthanide contraction
  - 3) Bronsted –Lawry concept of acid –Base
  - 4) Types of solvents and its general characteristics
  - 5) Ionisation potential of first transition series
  - 6) Oxidation states of actinides



- Q3 Multiple choice questions** 10

- 1) Which of the following is polar solvents
  - a)  $ccl_4$
  - b)  $H_2O$
  - c)  $C_6H_6$
  - d) None of these
- 2) The valence shell electronic configuration of Cr is
  - a)  $3d^3 4s^2$
  - b)  $3d^5 4s^2$
  - c)  $3d^5 4s^1$
  - d)  $3d^6 4s^2$
- 3) Coordination bond is formed in between central metal atom and -----
  - a) Ligand
  - b) Electrons
  - c) Protons
  - d) Neutrons
- 4) Oxalato ligand is a
  - a) Monodentate ligand
  - b) Bidentate ligand
  - c) Tridentate ligand
  - d) Tetradentate ligand



- 5) Actinide elements belongs to  
a) 3d block elements      b) 4f block elements  
c) 4f block elements      d) 5f block elements
- 6) According to Lux –Flood concept acid is a  
a) Proton donor    b) Proton acceptor    c) Oxide ion acceptor    d) Oxide ion donor
- 7) Among the following which is not a Lanthanide element  
a) Ce      b) Pr      c) Ba      d) Gd
- 8) According to werner's theory Primary valency is  
a) Non ionisable valency    b) Ionisable valency    c) Both a & b    d) None of these
- 9) Which of the following is a second elements of first transition series?  
a) Ti      b) Sc      c) Cr      d) Mn
- 10) Lanthanide contraction related to  
a) Electronegativity      b) Ionic size      c) Density      d) Atomic Mass

