

Rayat Shikshan Sanstha's

Rajarshi Chhatrapati Shahu College Kolhapur

Preliminary Examination 2021-22

Sub : Inorganic Chemistry

Std : BSc.III

Date :

Marks – 50

Time – 60 Min.

Attempt All Question Compulsary

1) CFT was proposed by -----

A) H,Bethe and J.Van Vleck

B) H,Bethe and Hahn

C) H,Bethe and Lewis

D) H,Bethe and Weisacker

2) $d_{x^2 - y^2}$ Orbital is -----

A) e_g

B) a_{1g}

C) t_{1u}

D) t_{2g}

3) In Octahedral complexes each t_{2g} electrons is stabilized by-----

A) $-6 Dq$

B) $-4 Dq$

C) $+6 Dq$

D) $+4 Dq$

4) Jahn-Teller distortions are ?

A) Automatic

B) Due to odd electrons in t_{2g}/e_g

C) common

D) Both (a) and (b)

5) CFSE for d^6 octahedral complex in weak field is ----- Dq

A) +4

B) - 4

C) - 6

D) -12

- 6) According to MOT $[\text{Co}(\text{NH}_3)_6]^{3+}$ is -----magnetic.
- A) Para B) Dia C) Non D) Ferro
- 7) CFSE for d^3 octahedral complex is -----Dq
- A) - 8 B) - 12 C) - 18 D) +12
- 8) MOT explains Satisfactorily -----of the complexes .
- A) charge transfer spectra B) Nephelauxetic effect
- C) Colour D) All Of These
- 9) Which of the following complex ion has four number of unpaired electrons?
- A) $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ B) $[\text{CoF}_6]^{3-}$ C) $[\text{Co}(\text{NH}_3)_6]^{3+}$ D) $[\text{Ni}(\text{NH}_3)_6]^{2+}$
- 10) d^3 octahedral complex is-----
- A) Low spin B) High spin C) Tetrahedral D) Diamagnetic
- 11) In Octahedral Complex ,Co-ordination number of central metal atom is-----
- A) 4 B) 6 C) 5 D) 7
- 12) MOT explains satisfactorily -----
- A) π bonding B) Charge transfer Spectra
- C) Nephelauxetic effect D) All of the Above
- 13) CFT gives total emphasis on -----
- A) Covalent bonding B) Ionic bonding
- C) Hydrogen bonding D) Metallic bonding
- 14) Which of the following complex ion has zero number of unpaired electrons?
- A) $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ B) $[\text{CoF}_6]^{3-}$ C) $[\text{Co}(\text{NH}_3)_6]^{3+}$ D) $[\text{Ni}(\text{NH}_3)_6]^{2+}$
- 15) The compound containing at least one metal-carbon bond is called -----compound
- A) Co-ordinate B) Organometallic C) Organic D) Inorganic
- 16) In trialkyl Aluminium dimer Al-C-Al bridging bond is-----
- A) (3c-2e) B) (2c-2e) C) (3c-1e) D) (3c-3e)

17) Terminal carbonyl groups linked with metal through -----bond.

- A) Ionic B) Sigma and Pi C) Covalent D) Hydrogen

18) Trialkyl aluminum is-----

- A) Monomer B) Trimer C) Tetramer D) Dimer

19) $\text{Ni}(\text{CO})_4$ has ----- structure .

- A) Octahedral B) Tetrahedral C) Square planer D) Trigonal bipyramidal

20) $\text{Cr}(\text{CO})_6$ has -----structure.

- A) Distorted octahedral B) Octahedral C) Tetrahedral D) Trigonal bipyramidal

21) The catalysts which accelerate the rate of chemical reactions are -----catalysts.

- A) Negative B) Positive C) Auto D) Induced

22) The chemical reaction in which one of the products acts as a catalyst is called ----- catalysts

- A) Negative B) Auto C) Acid –base D) Enzyme

23) Oxidation of oxalic acid by acidified KMnO_4 is example of -----catalysis

- A) Acid-base B) Negative C) Auto D) Induced

24) Maltose $\xrightarrow{\text{maltase}}$ Glucose. This is an example of ----- catalytic reaction

- A) Enzyme B) Acid C) Base D) Auto

25) The Substance which alter the rate of chemical reaction is called -----

- A) Promoter B) Inhibitor C) Catalyst D) Poison

