BSC_SEM_VI

NC-11 Organic Chem. Inorganic Chemistry - XIV (CGPA)

Time: One Hour **Max. Marks: 40**

Instructions : Attempt 40 question

1 The number of wave passing through the point in one minute is called as ….

(A)Frequency (B)Wavelength (C)Wave number (D)Amplitude

2 Which of following has lowest wavelength?

(A)Ultra-violet light (B)Infra red light (C)X-ray (D)Radio wave

3 What is a blue shift?

(A)The shifting of an absorption to longer wavelength (B)The shifting of an absorption towards the red end of the spectrum (C)The shifting of an absorption to lower energy (D)The shifting of an absorption to higher energy

4 Which of the following is not an auxochrome?

(A)-OH (B)-OCH_3 (C)-$N(CH_3)_2$ (D)-NO_2

5 Which compound would be expected to show intense IR absorption at 3300 cm^{-1}?

(A)Butane (B)$CH_3CH_2C{\equiv}CH$ (C)$CH_3CH_2CH_3$ (D)But-1-ene

6 Fingerprint region in infrared spectroscopy is lies between …..cm^{-1}.

(A)1500 - 4000 (B)600 – 1500 (C)600 – 4000 (D)None of Above

7 The characteristic absorption of nitrile group (CN) found at _____cm^{-1}

(A)2210-2260 (B)1810-1860 (C)2910-2960 (D)2610-2660

8 Methanol shows how many types of NMR signal

(A)Two (B)Three (C)One (D)Zero

9 Benzoic acid gives …….NMR signals

(A)3 (B)2 (C)4 (D)1

10 Diethyl ether contain ……..equivalent set of protons.

(A)2 (B)3 (C)1 (D)4

11 What do you except to observed in NMR spectrum of ethyl bromide?

(A)A doublet and a quartet (B)A doublet and a triplet (C)A quartet and a triplet (D)Two doublet

12 Hydrogen nuclei of acetylene molecule is

(A)Shielded (B)Deshielded (C)Both (D)None

13 The double bond unit (DBE) of organic compound having molecular formula C_6H_6O is

(A)1 (B)2 (C)3 (D)4

14 An aqueous solution of glycine is neutral in nature because of the formation of :

(A)Carbanion (B)Zwitter ion (C)Carbonium ion (D)Free radicals

15 Glycine is

(A)NH_2CH_2COOH (B)$NH_2CH_2CH_2CH_2CH_2NH_2$ (C)$NO_2CH_2CH_2COOH$ (D)$BrCH_2COOH$

16 Upon hydrolysis protein gives

(A)Fatty acids (B)Hydroxyl acids (C)Alcohols (D)Amino acids

17 The peptide formed by condensation of two amino acid molecules is called

(A)Dipeptide (B)Tripeptide (C)Tetrapeptide (D)Polypeptide

18 In synthesis of dipeptide, the reagent DCC is used for

(A)Dehydration (B)Hydration (C)Hydrolysis (D)Protonation

19 Proteins are polymers of

(A)Amines (B)Acids (C)Amino acids (D)None of the above

20 Which of the following is example of protein?

(A)Enzymes (B)Antibodies (C)Both (D)None

21 Homopolymer is a polymer which is formed from

(A)One type of monomer (B)Two type of monomer (C)Three type of monomer (D)Four type of monomer

22 Which polymer occurs naturally?

(A)Starch (B)Nylon (C)PVC (D)Thiokol

23 Bakelite is a example of …

(A)Addition polymerization reaction (B)Condensation polymerization reaction (C)Both (D)None

24 Baeyer- Villiger rearrangement reaction is carried out in presence of …..

(A)Acid (B)Peracid (C)Amines (D)Pyridine

25 Which intermediate is formed in Wolf Rearrangement reaction ?

(A)Carbene (B)Carbocation (C)Ketene (D)Carbanion

26 Conversion of an N-substituted amide functional group to an amine functional group with one less carbon atom in product is called …….. Rearrengmemt reaction

(A)Hofmann Rearrengmemt reaction (B)Fries Rearrengmemt reaction (C)Pinacol- Pinacolone Rearrengmemt reaction (D)Wolf Rearrengmemt reaction

27 Pinacol – Pinacolone rearrangement is an example of

(A)Electrophilic rearrangement (B)Nucleophilic rearrangement (C)Free radical rearrangement (D)Aromatic rearrangement

28 The ground state term for P^6 is same for

(A)d^{10} (B)d^6 (C)P^3 (D)d^5

29 Solutions of $[Co(Cl)_4]^{2-}$ are deep blue because

(A)It is tetrahedral anion (B)It has d^7 configuration (C)It has electronic transition in blue part of spectrum (D)None of these

30 Which of the following corresponds to absorption peak of maximum wave number in $[Cr(H_2O)_6]^{3+}$

(A)$^4A_{2g}$ ----> $^4T_{2g}(F)$ (B)$^4A_{2g}$ ----> $^4T_{1g}(P)$ (C)$^4A_{2g}$ ----> $^4T_{1g}(F)$ (D)$^4T_{2g}$ (F) ----> $^4T_{1g}(F)$

31 Ground state term symbol for $2P^3$ configuration is

(A)$^4S_{3/2}$ (B)$^3F_4$ (C)$^4S_1$ (D)$^2P_1$

32 Valence bond theory was developed by

(A)Pauling (B)Bethe (C)Sorenson (D)Jahn-Teller

33 The magnitude of crystal field splitting depends on...

(A)Nature of ligand (B)Oxidation state of metal ion (C)Size of d-orbital (D)All of the above

34 All the approaching ligands are at an equal distance from each of the d-orbital, the energy of d-orbital will…

(A)Increase by same amount (B)Decrease by same amount (C)No change (D)None of the above

35 In octahedral complex, the CFSE for d^5 in a strong field ligand is..

(A)-16 Dq + P (B)-20 Dq+ 2P (C)-24Dq + 3P (D)-18 Dq + 3P

36 The smaller value of crystal field splitting in tetrahedral complexes as compared to octahedral complex is due to

(A)Lesser number of ligands in octahedral field (B)Greater number of ligands in octahedral field (C)Lesser number of ligands in Tetrehedral field (D)Greater number of ligands in Tetrahedral field

37 The number of orbitals present in d subshell is,

(A)One (B)Three (C)Five (D)Seven

38 Jahn-Teller effects is not observed in high spin complexes of

(A)d^7 (B)d^8 (C)d^4 (D)d^9

39 In tetrahedral complexes CFSE for d^6 configuration is...

(A)-6Dq + P (B)-12Dq + 2P (C)-6Dq + 3P (D)-4 Dq + 4P

40 The CFSE -6 Dq observed in high spin octahedral complexes of

(A)d^2 (B)d^4 (C)d^6 (D)d^8