**Reg. NO:**

**TIME:**

**DATE: 21.4.20**

**CHEMICAL BONDING-PRACTICE SHEET-03 MARKS: 180**

**SUBJECT: CHEMISTRY**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  | |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **1.** | **Which represents metallic character in an element?** | | | | | | | | |  | a) |  | b) |  | c) |  | d) | None of these | | **2.** | **The enolic form of acetone contain** | | | | | | | | |  | a) | bonds, bond and 1 lone pair | | | b) | bonds, bonds and 2 lone pairs | | | |  | c) | bonds, bonds and 2 lone pairs | | | d) | bonds, bonds and 1 lone pairs | | | | **3.** | **The common features among the species and are** | | | | | | | | |  | a) | Bond order three and isoelectronic | | | b) | Bond order three and weak field ligands | | | |  | c) | Bond order two and -acceptors | | | d) | Isoelectronic and weak field ligands | | | | **4.** | **The high density of water compared to ice is due to** | | | | | | | | |  | a) | Hydrogen bonding interactions | | | | | | | |  | b) | Dipole-dipole interactions | | | | | | | |  | c) | Dipole-induced dipole interactions | | | | | | | |  | d) | Induced dipole induced dipole interactions | | | | | | | | **5.** | **Among the following species, identify the isostructural pairs** | | | | | | | | |  | a) | and | | | b) | and | | | |  | c) | and | | | d) | and | | | | **6.** | **Which combination will give the strongest ionic bond?** | | | | | | | | |  | a) | and | b) | and | c) | and | d) | and | | **7.** | **Ratio of and bonds is maximum in** | | | | | | | | |  | a) | Naphthalene | b) | Tetracyano methane | c) | Enolic form of urea | d) | equal | | **8.** | **In which pair or pairs is the strongest bond found in the first species?**  I: II: III: | | | | | | | | |  | a) | I only | b) | II only | c) | I and III only | d) | II and III only | | **9.** | **bond in (vinyl chloride) is stabilized in the same way as in** | | | | | | | | |  | a) | Benzyl chloride | b) | Benzoyl chloride | c) | Chlorobenzene | d) | Allyl chloride | | **10.** | **Select the correct statement about resonance** | | | | | | | | |  | a) | The larger the number of the contributing structures, the greater the stability of the molecule | | | | | | | |  | b) | Greater number of the covalent bonds add to the stability of the molecule | | | | | | | |  | c) | The positive charge should reside, as far as possible, on the less electronegative element | | | | | | | |  | d) | All the above are correct statements | | | | | | | | **11.** | **Which of the following have identical bond order?**  I. II.  III. IV. | | | | | | | | |  | a) | I, III | b) | II, IV | c) | I, II, III | d) | I, IV | | **12.** | **The geometry of the atoms in the species is best described as** | | | | | | | | |  | a) | Tetrahedral | b) | - | c) | Square | d) | Trigonalbipyramidal | | **13.** | **In a Lewis dot structure, the electrons which complete an octet but are not located between two atoms are**  **referred to as** | | | | | | | | |  | a) | Bonding pairs b)Deltaminus electrons c) Excess electrons d)Lonepairs | | | | | | | |  |  |  | | | | | | | |  |  |  | | | | | | | |  |  |  | | | | | | | | **14.** | **Which one of the following compounds has the electron-pair geometry as the trigonalbipyramidal with**  **Three equatorial positions occupied by lone pairs of electrons?** | | | | | | | | |  | a) |  | | | | | | | |  | b) |  | | | | | | | |  | c) |  | | | | | | | |  | d) |  | | | | | | | | **15.** | **Correct Lewis structure is** | | | | | | | | |  | a) |  | b) |  | c) |  | d) |  | | **16.** | **A molecule in which the central atom forms three single bonds and has one lone pair is said to be have a ……**  **shape** | | | | | | | | |  | a) | Bent | b) | Linear | c) | Planar | d) | Pyramidal | | **17.** | **The correct order of increasing bond length of is** | | | | | | | | |  | a) |  | b) |  | c) |  | d) |  | | **18.** | **The percentage of -character in the orbitals forming bonds in is** | | | | | | | | |  | a) | 25 | b) | 33 | c) | 50 | d) | 75 | | **19.** | **Select the correct statement** | | | | | | | | |  | a) | Both lattice energy and hydration energies decrease with ionic size | | | | | | | |  | b) | Lattice energy can be calculated using Born-Haber cycle | | | | | | | |  | c) | If the anion is large compared to the cation, the lattice energy will remain almost constant within a particular group | | | | | | | |  | d) | All of the above are correct statements | | | | | | | | **20.** | **The paramagnetism of oxygen is best explained by** | | | | | | | | |  | a) | MO theory | b) | Valence bond theory | c) | VSEPR theory | d) | Lewis dot structure | | **21.** | **When a chemical bond is formed, there is decrease in** | | | | | | | | |  | a) | Kinetic energy | b) | Potential energy | c) | Repulsive force | d) | Attractive force | | **22.** | **According to MO theory,** | | | | | | | | |  | a) | is paramagnetic and bond order greater than | | | | | | | |  | b) | is paramagnetic and bond order less than | | | | | | | |  | c) | is diamagnetic and bond order is less than | | | | | | | |  | d) | is diamagnetic and bond order is more than | | | | | | | | **23.** | **The formal charge of the O atoms in the ion** | | | | | | | | |  | a) |  | b) |  | c) | 0 | d) |  | | **24.** | **Which of the following can provide an electron pair for the formation of a coordinate covalent bond?** | | | | | | | | |  | a) |  | b) |  | c) |  | d) |  | | **25.** | **Which of these molecules have non-bonding electron pairs on the central atom?**  **I. II. III.** | | | | | | | | |  | a) | II only | b) | I and II only | c) | I and III only | d) | I, II and III | | **26.** | **A molecule of the type has square pyramidal geometry. Hence, number of lone pairs on is** | | | | | | | | |  | a) | 4 | b) | 3 | c) | 2 | d) | 1 | | **27.** | **Coordinate covalent bond is absent in** | | | | | | | | |  | a) |  | | | b) | Adduct of and | | | |  | c) |  | | | d) |  | | | | **28.** | **Which is not the resonance structure of phenoxide ion?** | | | | | | | | |  | a) |  | b) |  | c) |  | d) |  | | **29.** | **Assuming that Hund’s rule is violated, the bond order and magnetic nature of the diatomic molecule is** | | | | | | | | |  | a) | 1 and diamagnetic | b) | 0 and diamagnetic | c) | 1 and paramagnetic | d) | 0 and paramagnetic | | **30.** | **Among and , unpaired electron is present in** | | | | | | | | |  | a) | only | b) | and | c) | and | d) | only | | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  | | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  | | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  | | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  | | |  |  | | |
|  |  |  | | |  |  | | |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  |  |  |  |  |  |  |
|  |  | | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  | | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  |  | | | | | | |
|  |  | | | | | | | |