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**Max Time : 2 hr** **Class : 11th Chemistry Max Marks : 25**

**Combined Topic Test**

1. MCQs : [ 1 x 7 = 7 ]
2. Which of the following species has tetrahedral geometry ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) | b) | c) | d) H3O+ |

1. Which of the following options represents the correct bond order :

|  |  |  |  |
| --- | --- | --- | --- |
| a) > O2 > | b) < O2 < | c) > O2 < | d) < O2 > |

1. Which of the following is not paramagnetic ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) S2- | b) NO | c) | d) |

1. The type of hybrid orbitals used by chlorine atom in is

|  |  |  |  |
| --- | --- | --- | --- |
| a) sp3 | b) sp2 | c) sp | d) none of these |

1. The hybridization of atomic orbitals of nitrogen in , and are

|  |  |  |  |
| --- | --- | --- | --- |
| a) sp, sp3 and sp2 | b) sp, sp2 and sp3 | c) sp2, sp and sp3 | d) sp2, sp3 and sp |

1. Shape of O2F2 is similar to that of

|  |  |  |  |
| --- | --- | --- | --- |
| a) C2F2 | b) H2O2 | c) H2F2 | d) C2H2 |

1. SF2 , SF4 & SF6 have the hybridisations at sulphur atom respectively as

|  |  |  |  |
| --- | --- | --- | --- |
| a) sp2 , sp3 , sp3d2 | b) sp3 , sp3 , sp3d2 | c) sp3 , sp3d , sp3d2 | d) sp3 , sp3d2 , d2sp3 |

1. The volume of a gas is 1.12 x 10-7 cm3 at NTP. Calculate the number of molecules of the gas. [ 2 ]
2. Calculate the Molality of a solution of ethanol in water in which the mole fraction of ethanol is 0.080.

[ 2 ]

1. Concentration of glucose in normal blood is 36 mg per 400 mL. What is the Molarity of the glucose in blood. [ 2 ]
2. Calculate the frequency of infrared radiations having wavelength 3 x 106 nm. [ 2 ]
3. Calculate the percentage of higher isotope of neon which has atomic mass 20.2 and the isotopes have the mass number 20 and 22. [ 2 ]
4. Define molality and molarity. [ 2 ]
5. Find the Hybridisation of the following and also draw its shape. [ 1 x 3 = 3 ]

(a) PCl5 (b) XeO4 (c) SF4

1. Write the electronic configuration an dmagnetic moment of : [ 1 x 3 = 3 ]

(a) S (b) Fe (c) Na