

SEM	SET	PAPER CODE	TITLE OF THE PAPER
VI	2012	11UCH630212	INORGANIC CHEMISTRY – II

SECTION – A**Answer all the questions:****20 x 1 = 20****Choose the correct answer:**

- The geometry and hybridisation of XeF_2 molecule is
 - linear, sp
 - linear, sp^2
 - trigonal, sp^2
 - linear, sp^3d
- NiO exhibits _____ the defect.
 - Schottky
 - Frenkel
 - Metal deficiency
 - metal excess
- Which one of the following metallo enzyme contains manganese as trace metal?
 - alkaline phosphatase
 - cytochrome oxidase
 - Arginase
 - Peroxidases
- In the precipitation of AgCl from AgNO_3 , addition of _____ serves as a common ion
 - KCl
 - KNO_3
 - K_2CO_3
 - K_2SO_4
- The size of the nanoparticle is _____.
 - 10^{-9}cm
 - 10^{-9}m
 - 1A°
 - 10^{-9}mm

Fill in the blanks:

6. Overlap of P_x orbital of one atom with P_x orbital of another atom results in _____.
7. An ideal crystal is one, which has _____.
8. Hemoglobin is paramagnetic due to _____.
9. The ratio I/I_0 is known as _____.
10. Sol-gel synthesis of nano particles use _____ as the starting material.

State True or False:

11. Condition for overlapping is that, the A.O's should have same symmetry.
12. Higher the valency of ions, lesser would be lattice energy of the ionic crystal.
13. The Fe -O₂ bond in oxymyoglobin is linear.
14. Beer Lambert law holds good when the solute forms coloured complexes.
15. Preparation of multiwalled carbon nanotubes requires transition metal catalyst.

Match the following:

- | | |
|----------------------------------|--|
| 16. Bond order of N ₂ | - a) high melting point |
| 17. Ionic bond | - b) bucky ball |
| 18. Na, K, Ca | - c) trace metal |
| 19. K _s of AgCl | - d) 3 |
| 20. fullerene | - e) buck metal |
| | - f) [Ag ⁺] [Cl ⁻] |

SECTION – B

Answer all the questions:

5 x 4 = 20

21. a. List the basic principles of molecular orbital theory.

OR

b. Discuss the geometry and hybridisation in NH_3 based on VSEPR theory.

22. a. Explain the factors that favour the formation of ionic bond.

OR

b. What is a metallic bond? Illustrate the nature of metallic bond on the basis of “Electron Sea model”.

23. a. Discuss the role played by sodium and potassium ion in biological system and explain sodium – potassium pump.

OR

b. Explain the characteristic features of vitamin B_{12} .

24. a. Give the schematic representation of TGA instrument and precautions in the use of thermobalance.

OR

b. Explain the sampling and any one application of TLC.

25. a. Describe the sol-gel method of synthesising nano materials.

OR

b. Discuss the properties of fullerenes.

