

# VITEEE 2023 Question Paper April 17 (Memory-Based)

## Physics Questions

Question 1. Orbital angular momentum of electron in 4d orbital  
( $\sqrt{6}\hbar$   $\sqrt{4}\hbar$   $\sqrt{8}\hbar$   $\sqrt{12}\hbar$ )

Question 2. Two spheres with unequal radii have charge - if they are connected by a thin wire what will happen to charges

Question 3. Which of the following is not equal to 1 in boolean algebra  
{ $A \bar{A}$   $A \bar{A}$   $\bar{A} + A$   $A + \bar{A}$ }

Question 4. Which of the following is metal compound semiconductor  
{NaCl GaAs Si Ge}

Question 5. A girl focused monochromatic orange light instead of monochromatic green light through a convex lens What will happen to focal length? (increase decrease does not change changes by a factor of )

Question 6. If acceleration of a particle is proportional to  $x$  what will gain in kinetic energy be proportional to? ( $x$   $\sqrt{x}$   $x^2$   $x^3$ )

Question 7. A body has speed  $2 + \sqrt{2}$  m/s if speed increases by 2 m/s how will kinetic energy be affected? (Halved Doubled Increases by factor of  $\sqrt{2}$ )

Question 8. Semiconductors chapter base emitter numerical 9)  
Percentage mass defect

**Question 10. Half life of x is 3.8 days, what will be mass of 2mg material after days?**

**Question 11. Binding energy of nucleus on the surface will be (same as interior more than interior depends on surrounding of nucleus less than interior)**

**Question 12. Body of mass M kept on frictionless surface connected to spring of constant k attached to vertical wall. bullet enters inelastically and settles in the block. calculate compression (options given in terms of M m v. K)**

**Question 13. Electron Jumps from 4th orbital to ground state in hydrogen atom. What is the number of visible spectral lines? (6.4 2.3)**

**Question 14. Electrostatics  $-4q$  and  $+2q$  charges dipole present in uniform electric field direction of rotation and net force? {**

- a) clockwise right**
- b) clockwise left**
- c) anticlockwise left**
- d) anticlockwise right**

## Chemistry Questions

Question 1.  $S_N1$ .  $S_N2$  question asked

Question 2. Commercial prep of benzaldehyde (oxidation of toluene, etard rxn, oxidation of benzene phenol, oxidation of chlorobenzene)

Question 3. Direct formula of P total asked from solutions chap

Question 4. Enantiomers, Diastereomers matrix match

Question 5. Number of sigma bonds in compound

Question 6. Which of the following complexes have  $sp^3$  hybridized metal { $PdCl_4^{2-}$ ,  $Zn(CN)_4^{2-}$ ,  $Ni(CN)_4^{2-}$ }

Question 7. Which of the following has square planar complex (ans was  $NiCO_4$  - don't remember options)

## **Mathematics Questions**

**Question 1. Matrices, Determinants 6-7 questions**

**Question 2. Vector 3d Many questions**

**Question 3. Sequence and Series - Coefficient of 18th term in series**

**Question 4. Simple definite integration**

**Question 5. Integration by substitution easy**

**Question 6. Homogeneous equation given and solution asked**

**Question 7. Finding domain**

**Question 8. Complex numbers one question**

## **Aptitude and English Questions**

**Question 1. Odd one out 10, 26, 21, 24, 18**

**Question 2) Data sufficiency easy question**

**Question 3) All sages are kind. All artists are kind**

**S1. All sages are artists**

**S2. All artists are sages**

**S3. Some kind (persons) are artists**

**S4. Some kind (persons) are sages**

**Which Statement follow?**

**a) Only S1**

**b) Only S4**

**c) Both S1 and S2**

**d) Both S3 and S4**

**Question 4. English Very easy - Comprehension understand and write what is the main idea of the given extract, what is the meaning of keeping up with the joneses.**

**Question 5. 2003 similar to which year?**