# VITEEE 2025 Apr 25 Shift 1 Question Paper

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**1. The work done by a conservative force in a closed path is:**

(A) Positive

(B) Negative

(C) Zero

(D) Infinite

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**2. A particle moves with uniform acceleration along a straight line. The average velocity over an interval is equal to the instantaneous velocity at:**

(A) The beginning of the interval

(B) The end of the interval

(C) The midpoint of the interval

(D) Any point in the interval

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**3. The unit of electric field intensity is:**

(A) N/C

(B) J/C

(C) V/m

(D) Both A and C

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**4. In a p-n junction diode, the reverse saturation current doubles for every rise in temperature of:**

(A) $5^\circ$C

(B) $10^\circ$C

(C) $15^\circ$C

(D) $20^\circ$C

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**5. The number of moles of oxygen required for complete combustion of 2 moles of methane is:**

(A) 2

(B) 4

(C) 6

(D) 8

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**6. Which gas is known as laughing gas?**

(A) NO

(B) $N_2O$

(C) $NO_2$

(D) $N_2O_5$

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**7. The shape of $PCl_5$ molecule is:**

(A) Trigonal planar

(B) Trigonal bipyramidal

(C) Tetrahedral

(D) Octahedral

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**8. According to Le Chatelier's principle, increasing pressure favours the reaction that:**

(A) Produces more moles of gas

(B) Produces fewer moles of gas

(C) Has no change in moles

(D) Is exothermic

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**9. The solution of the equation $\sin x + \cos x = 0$ in $[0, 2\pi]$ is:**

(A) $\pi/4,\ 5\pi/4$

(B) $3\pi/4,\ 7\pi/4$

(C) $\pi/2,\ 3\pi/2$

(D) $\pi/4,\ 7\pi/4$

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**10. The value of $\lim_{x\to 0} \frac{\sin 3x}{x}$ is:**

(A) $1$

(B) $3$

(C) $0$

(D) $\infty$

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**11. If the matrix $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ has determinant $k$, then the determinant of its adjoint is:**

(A) $k$

(B) $k^2$

(C) $1/k$

(D) $-k$

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**12. The probability of getting exactly 2 heads in 4 tosses of a fair coin is:**

(A) $3/8$

(B) $1/4$

(C) $3/16$

(D) $1/2$

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**13. A man is 4 times as old as his son. After 5 years, he will be 3 times as old as his son. The present age of the son is:**

(A) 5 years

(B) 10 years

(C) 15 years

(D) 20 years

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**14. Complete the series:** $7,\ 10,\ 16,\ 25,\ 37,\ ?$

(A) 46

(B) 50

(C) 52

(D) 55

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