VITEEE 2025 Apr 26 Shift 2 Question Paper

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1. A body weighs 50 N on the surface of Earth. Its weight at a height equal to the radius of Earth from the surface is:

(A) 12.5 N

(B) 25 N

(C) 50 N

(D) 100 N

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2. A sound wave has frequency 500 Hz and wavelength 0.68 m. The speed of sound is:

(A) 340 m/s

(B) 350 m/s

(C) 330 m/s

(D) 360 m/s

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3. Two point charges $+q$ and $-q$ are placed at distance $2a$ apart. The electric field intensity is zero at a point on the axis at distance x from the midpoint. Then x is:

(A) a

(B) $2a$

(C) $a/\sqrt{2}$

(D) ∞

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4. The activity of a radioactive sample decreases to 25% of its initial value in 60 days. The half-life is:

(A) 30 days

(B) 60 days

(C) 20 days

(D) 40 days

5. The osmotic pressure of a 0.1 M solution of NaCl at 27°C is ($R = 0.082$ L atm mol^{-1} K^{-1}):

(A) 4.92 atm

(B) 2.46 atm

(C) 9.84 atm

(D) 0.492 atm

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6. Which of the following has the highest lattice energy?

(A) NaCl

(B) KCl

(C) MgO

(D) CsI

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7. The order of reactivity of alcohols towards dehydration is:

(A) Primary ¿ Secondary ¿ Tertiary

(B) Tertiary ¿ Secondary ¿ Primary

(C) Secondary ¿ Primary ¿ Tertiary

(D) Primary ¿ Tertiary ¿ Secondary

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8. The compound that gives iodoform test is:

(A) Acetaldehyde

(B) Benzaldehyde

(C) Formaldehyde

(D) Propionaldehyde

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9. The derivative of $\tan^{-1}\sqrt{\dfrac{1-\cos x}{1+\cos x}}$ with respect to x is:

(A) $1/4$

(B) $1/2$

(C) 1

(D) $-1/2$

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10. If $\sin A = \frac{3}{5}$ and $\cos B = \frac{12}{13}$, where A and B are acute angles, then $\sin(A+B)$ is:

(A) $33/65$

(B) $63/65$

(C) $56/65$

(D) $16/65$

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11. The number of solutions of the equation $2|x| + |x-2| = 4$ is:

(A) 0

(B) 1

(C) 2

(D) Infinite

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12. A die is rolled 5 times. The probability of getting at least one six is:

(A) $1/6$

(B) $5/6$

(C) $(5/6)^5$

(D) $1 - (5/6)^5$

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13. If the roots of the quadratic equation $x^2 - (p+1)x + p = 0$ are equal, then p is:

(A) $1/4$

(B) $-1/4$

(C) 1

(D) -1

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14. A clock shows 3:00. The angle between the hour and minute hands is:

(A) 90°

(B) 60°

(C) 180°

(D) 0°

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15. Find the missing number: $3,\ 8,\ 18,\ 35,\ ?,\ 98$

(A) 56

(B) 60

(C) 64

(D) 70
