VITEEE 2025 Apr 27 Shift 1 Question Paper

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1. A body is projected with velocity 20 m/s at an angle of $30°$ to the horizontal. The maximum height reached by the body is ($g = 10$ m/s^2):

   (A) 5 m

(B) 10 m

(C) 15 m

(D) 20 m

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2. Two capacitors of capacitance 2 μF and 4 μF are connected in series. The equivalent capacitance is:

   (A) 6 μF

(B) 1.33 μF

(C) 8 μF

(D) 2 μF

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3. In Young's double-slit experiment, the fringe width is 0.6 mm. If the distance between the slits and screen is doubled, and the separation between slits is halved, the new fringe width will be:

   (A) 0.3 mm

(B) 1.2 mm

(C) 2.4 mm

(D) 4.8 mm

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4. The dimensional formula for magnetic flux is:

   (A) $[ML^2T^{-2}A^{-1}]$

(B) $[MLT^{-2}A^{-1}]$

(C) $[ML^2T^{-1}A^{-2}]$

(D) $[ML^2T^{-2}A]$

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5. The IUPAC name of CH₃-CH(OH)-COOH is:

   (A) 2-Hydroxypropanoic acid

(B) 2-Hydroxyethanoic acid

(C) 3-Hydroxypropanoic acid

(D) Ethanoic acid

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6. Which of the following has the highest boiling point?

   (A) Ethane

(B) Ethene

(C) Ethyne

(D) Methane

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7. In the reaction: $2H_2O_2 \rightarrow 2H_2O + O_2$, the rate of disappearance of H_2O_2 is 0.2 mol/L/s. The rate of appearance of O_2 is:

   (A) 0.1 mol/L/s

(B) 0.2 mol/L/s

(C) 0.4 mol/L/s

(D) 0.05 mol/L/s

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8. The hybridization of carbon in diamond is:

   (A) sp

(B) sp^2

(C) sp^3

(D) dsp^2

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9. The value of $\int_0^{\pi/2} \sin^2 x \, dx$ is:

(A) $\pi/4$

(B) $\pi/2$

(C) 1

(D) π

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10. If $A = \{1, 2, 3\}$**,** $B = \{3, 4\}$**, then** $A \cup B$ **is:**

(A) {1,2}

(B) {3}

(C) {1,2,3,4}

(D) {1,2,3}

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11. If the day after tomorrow is Wednesday, what day is today?

(A) Monday

(B) Tuesday

(C) Sunday

(D) Saturday

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12. Choose the correct synonym for "Eloquent":

(A) Silent

(B) Articulate

(C) Clumsy

(D) Dull