VITEEE 2025 April 22 Shift 2 Question Paper

Time Allowed :2 Hours 30 minutes	**Maximum Marks :**125	**Total Questions :**125

General Instructions

Read the following instructions very carefully and strictly follow them:

1. The test is of 2 hours and 30 minutes duration.
2. The question paper consists of 125 questions. The maximum marks are 200.
3. There are three parts in the question paper consisting of Physics, Chemistry, Biology/Mathematics, Aptitude and English e.

1. Find the derivative of $f(x) = 3x^2 - 4x + 7$.

(1) $6x - 4$

(2) $6x - 7$

(3) $3x - 4$

(4) $3x + 4$

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2. Solve for x in the equation $\frac{2x-3}{4} = 5$.

(1) $x = 13$

(2) $x = 14$

(3) $x = 15$

(4) $x = 16$

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3. Find the value of $\log_2 32$.

(1) 5

(2) 4

(3) 3

(4) 6

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4. Find the value of x in the equation $4(x - 2) = 3(x + 5)$.

(1) $x = 23$

(2) $x = 3$

(3) $x = 7$

(4) $x = -7$

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5. Find the derivative of $f(x) = 4x^3 - 6x^2 + 2x - 5$.

(1) $12x^2 - 12x + 2$

(2) $12x^2 - 10x + 2$

(3) $12x^2 - 12x + 5$

(4) $12x^2 - 10x + 3$

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6. What is the area of a triangle with base $12\,\text{cm}$ and height $8\,\text{cm}$?

(1) $48\,\text{cm}^2$

(2) $60\,\text{cm}^2$

(3) $40\,\text{cm}^2$

(4) $36\,\text{cm}^2$

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7. A body of mass 10 kg is moving with a velocity of 20 m/s. What is the kinetic energy of the body?

(1) $2000\,\text{J}$

(2) $1000\,\text{J}$

(3) $4000\,\text{J}$

(4) $5000\,\text{J}$

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8. A capacitor is charged with a voltage of 100 V. If the capacitance of the capacitor is $10\,\mu\text{F}$, what is the charge on the capacitor?

(1) $1\,\text{C}$

(2) $10\,\text{C}$

(3) $100\,\text{C}$

(4) $0.1\,\text{C}$

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9. A ball is dropped from a height of 20 m. What is its velocity just before hitting the

ground? (Take $g = 9.8\,\text{m/s}^2$)

(1) $10\,\text{m/s}$

(2) $14\,\text{m/s}$

(3) $20\,\text{m/s}$

(4) $18\,\text{m/s}$

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10. A force of $10\,\text{N}$ acts on a body of mass $2\,\text{kg}$. What is the acceleration of the body?

(1) $5\,\text{m/s}^2$

(2) $2\,\text{m/s}^2$

(3) $4\,\text{m/s}^2$

(4) $1\,\text{m/s}^2$

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11. A parallel plate capacitor has a capacitance of $4\,\mu\text{F}$. If the dielectric constant of the material between the plates is 5, what will be the new capacitance?

(1) $20\,\mu\text{F}$

(2) $15\,\mu\text{F}$

(3) $8\,\mu\text{F}$

(4) $10\,\mu\text{F}$

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12. A body is thrown vertically upwards with an initial velocity of $10\,\text{m/s}$. How high will the body rise? (Take $g = 10\,\text{m/s}^2$)

(1) $5\,\text{m}$

(2) $10\,\text{m}$

(3) $20\,\text{m}$

(4) $50\,\text{m}$

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13. A body of mass 5 kg is moving with a velocity of 15 m/s. What is its momentum?

(1) $75\,\text{kg} \cdot \text{m/s}$

(2) $50\,\text{kg} \cdot \text{m/s}$

(3) $25\,\text{kg} \cdot \text{m/s}$

(4) $10\,\text{kg} \cdot \text{m/s}$

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14. What is the wavelength of a sound wave with a frequency of 500 Hz in air? (Take the speed of sound in air as 340 m/s)

(1) 0.68 m

(2) 0.68 cm

(3) 1.7 m

(4) 1.5 m

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15. What is the molecular mass of K_2SO_4?

(1) 174 g/mol

(2) 132 g/mol

(3) 144 g/mol

(4) 94 g/mol

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16. Which of the following gases has the highest density at STP?

(1) CO_2

(2) O_2

(3) N_2

(4) CH_4

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17. What is the pH of a 0.01 M solution of HCl?

(1) 2

(2) 1

(3) 4

(4) 3

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18. Which of the following compounds has the highest boiling point?

(1) H_2O

(2) CH_4

(3) NH_3

(4) CO_2

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19. What is the oxidation number of sulfur in H_2SO_4?

(1) $+6$

(2) $+2$

(3) 0

(4) -2

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20. What is the pH of a 0.01 M solution of NaOH?

(1) 12

(2) 13

(3) 14

(4) 11
