

VITEEE 2025 Apr 27 Shift 2 Question Paper

1. A stone is dropped from a height of 80 m. At the same instant, another stone is projected vertically upwards from the ground with a speed of 40 m/s. The time after which they meet is ($g = 10 \text{ m/s}^2$):

- (A) 2 s
 - (B) 4 s
 - (C) 6 s
 - (D) 8 s
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2. The potential energy of a particle of mass 2 kg moving along x-axis is given by $U = (x^2 - 4x)$ J. The force acting on it at $x = 3$ m is:

- (A) 2 N
 - (B) -2 N
 - (C) 4 N
 - (D) -4 N
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3. Light of wavelength 600 nm is incident on a metal surface with work function 2 eV. The maximum kinetic energy of photoelectrons is:

- (A) 0.07 eV
 - (B) 0.7 eV
 - (C) 2.07 eV
 - (D) 4.14 eV
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4. A transformer has 500 turns in primary and 100 turns in secondary. If input voltage is 220 V AC, the output voltage is:

- (A) 44 V
- (B) 1100 V

- (C) 220 V
 - (D) 440 V
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5. The molarity of a solution containing 4 g of NaOH in 250 mL solution is:

- (A) 0.1 M
 - (B) 0.4 M
 - (C) 0.2 M
 - (D) 1 M
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6. Which of the following compounds will show geometrical isomerism?

- (A) $\text{CH}_3\text{-CH=CH-CH}_3$
 - (B) $\text{CH}_2\text{=CH-Cl}$
 - (C) $\text{CH}_3\text{-CH=CH-Cl}$
 - (D) $(\text{CH}_3)_2\text{C=CH}_2$
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7. The enthalpy change for the reaction $2\text{C}(\text{graphite}) + 3\text{H}_2(\text{g}) \rightarrow \text{C}_2\text{H}_6(\text{g})$ is called:

- (A) Enthalpy of combustion
 - (B) Enthalpy of formation
 - (C) Enthalpy of vaporization
 - (D) Enthalpy of sublimation
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8. In qualitative analysis, the cation precipitated as sulphide in Group IV is:

- (A) Ni^{2+}
 - (B) Zn^{2+}
 - (C) Cu^{2+}
 - (D) Fe^{2+}
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9. The value of $\cos 15^\circ + \sin 15^\circ$ is:

- (A) $\sqrt{2}$
- (B) $\sqrt{3}$

(C) $\frac{\sqrt{6}+\sqrt{2}}{2}$

(D) $\frac{\sqrt{6}-\sqrt{2}}{2}$

10. If A and B are two matrices such that AB is defined and $AB = A$, then B is:

(A) Identity matrix

(B) Null matrix

(C) Unit matrix

(D) Inverse of A

11. The area bounded by the curve $y = x^2$, the x-axis and the lines $x = 1$ and $x = 2$ is:

(A) $7/3$

(B) $8/3$

(C) $5/3$

(D) $2/3$

12. A bag contains 5 red and 3 blue balls. Two balls are drawn one by one with replacement. The probability that both are red is:

(A) $25/64$

(B) $15/64$

(C) $25/28$

(D) $15/28$

13. If the sum of the first n terms of an A.P. is $3n^2 + 5n$, then the 10th term is:

(A) 65

(B) 68

(C) 71

(D) 74

14. A person travels from A to B at 40 km/h and returns at 60 km/h. The average speed for the entire journey is:

- (A) 50 km/h
 - (B) 48 km/h
 - (C) 52 km/h
 - (D) 45 km/h
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15. Find the next term in the series: 4, 9, 25, 49, 121, ?

- (A) 169
 - (B) 225
 - (C) 289
 - (D) 361
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16. If BOOK is coded as 41, then PAGE is coded as:

- (A) 55
 - (B) 56
 - (C) 57
 - (D) 58
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17. Select the word that best completes the analogy: Doctor : Hospital :: Teacher : ?

- (A) Kitchen
 - (B) Court
 - (C) School
 - (D) Office
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18. Choose the correctly spelt word:

- (A) Accomodation
 - (B) Accommodation
 - (C) Acommodation
 - (D) Accomoddation
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