VITEEE 2025 Memory Based Question Paper PDF (April 23, 2025) (Shift 1)

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1. A body of mass 2 kg is moving with a velocity of 3 m/s. What is its kinetic energy?

(1) 6 J

(2) 9 J

(3) 12 J

(4) 18 J

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2. A bulb rated 60 W operates for 2 hours. How much energy does it consume in this time?

(1) 120 J

(2) 1200 J

(3) 720 J

(4) 4320 J

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3. What is the focal length of a lens if its power is $+2$ D?

(1) 0.5 m

(2) 1.0 m

(3) 2.0 m

(4) 0.2 m

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4. A stone is dropped from a height of 45 m. What is the time taken for the stone to reach the ground?

(1) 3 s

(2) 5 s

(3) 6 s

(4) 9 s

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5. A current of 2 A flows through a resistor for 10 minutes. What is the total charge that flows through the resistor?

(1) 120 C

(2) 200 C

(3) 240 C

(4) 360 C

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6. A body of mass 10 kg is moving with a speed of 5 m/s. What is the momentum of the body?

(1) 50 kg m/s

(2) 100 kg m/s

(3) 200 kg m/s

(4) 25 kg m/s

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7. The potential energy of a body at a height of 10 meters is 200 J. What is its mass? (Take $g = 10\,\text{m/s}^2$)

(1) 2 kg

(2) 5 kg

(3) 10 kg

(4) 20 kg

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8. What is the resistance of a conductor if the potential difference across it is 12 V and the current flowing through it is 3 A?

(1) 4 Ω

(2) 6 Ω

(3) 9 Ω

(4) 12 Ω

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9. A convex lens has a focal length of 10 cm. What is the magnification produced when the object is placed 30 cm from the lens?

(1) 2

(2) 3

(3) 1.5

(4) 4

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10. What is the molar mass of NaCl?

(1) 58 g/mol

(2) 60 g/mol

(3) 62 g/mol

(4) 56 g/mol

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11. Which of the following is an example of a redox reaction?

(1) $H_2 + Cl_2 \rightarrow 2\,HCl$

(2) $NaCl + AgNO_3 \rightarrow NaNO_3 + AgCl$

(3) $C_2H_5OH + 3\,O_2 \rightarrow 2\,CO_2 + 3\,H_2O$

(4) $H_2 + O_2 \rightarrow 2\,H_2O$

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12. What is the pH of a solution if the concentration of H^+ ions is 1×10^{-5} mol/L?

(1) 5

(2) 6

(3) 4

(4) 7

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13. What is the number of moles in 18 g of water (H_2O)?

(1) 1 mol

(2) 0.5 mol

(3) 2 mol

(4) 0.25 mol

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

(1) O_2

(2) N_2

(3) CO_2

(4) H_2

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15. Which of the following acids is a strong acid?

(1) H_2SO_4

(2) CH_3COOH

(3) H_2CO_3

(4) HNO_3

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16. What is the pH of a solution with a H^+ concentration of 1×10^{-3} mol/L?

(1) 3

(2) 4

(3) 5

(4) 6

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17. Which of the following is an example of an exothermic reaction?

(1) $H_2 + Cl_2 \rightarrow 2\,HCl$

(2) $N_2 + 3\,H_2 \rightarrow 2\,NH_3$

(3) $C_6H_6 + 15\,O_2 \rightarrow 6\,CO_2 + 3\,H_2O$

(4) $N_2 + 3\,H_2 \rightarrow 2\,NH_3$

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18. What is the molar volume of an ideal gas at standard temperature and pressure (STP)?

(1) 22.4 L/mol

(2) 1 L/mol

(3) 24 L/mol

(4) 12 L/mol

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19. Which of the following is a characteristic property of acids?

(1) They turn blue litmus paper red.

(2) They turn red litmus paper blue.

(3) They are slippery to touch.

(4) They have a bitter taste.

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20. Find the value of x in the equation $2x + 3 = 7x - 8$.

(1) $x = 1$

(2) $x = 2$

(3) $x = 3$

(4) $x = 4$

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21. The sum of the first 10 terms of an arithmetic progression is 150. If the first term is 10, what is the common difference?

(1) 5

(2) 3

(3) 4

(4) 2

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22. What is the area of a triangle with base 8 cm and height 6 cm?

(1) 24 cm^2

(2) 30 cm^2

(3) 36 cm^2

(4) 48 cm^2

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23. Solve for x in the equation $\frac{1}{x} + \frac{1}{x+2} = \frac{5}{6}$.

(1) $x = 1$

(2) $x = 2$

(3) $x = 3$

(4) $x = 4$

24. Find the solution of the quadratic equation $2x^2 - 3x - 5 = 0$.

(1) $x = 1, x = -2$

(2) $x = -1, x = 2$

(3) $x = \frac{5}{2}, x = -1$

(4) $x = \frac{-5}{2}, x = 1$

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25. The ratio of the sum of two numbers to their difference is 5:1. If the sum of the numbers is 18, find the numbers.

(1) 12, 6

(2) 10, 8

(3) 9, 9

(4) 14, 4

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26. Coding Decoding: If in a certain code language, "APPLE" is written as "BQQMF", how would "MANGO" be written in the same code?

(1) NBPHP

(2) NBQHP

(3) NCPHQ

(4) MBOHP

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27. Data Interpretation: The following table shows the number of students in five different colleges. Answer the questions based on the data.

College	Number of Students
A	1000
B	1500
C	1200
D	1300
E	900

Question: What is the average number of students in all five colleges?

(1) 1200

(2) 1000

(3) 1100

(4) 1300

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28. Clock Calendars: If today is Monday, what day of the week will it be after 100 days?

(1) Thursday

(2) Wednesday

(3) Tuesday

(4) Friday

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29. Simple Arithmetic: What is the value of 15% of 120?

(1) 12

(2) 18

(3) 24

(4) 15

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30. Poetic Devices: Identify the poetic device used in the following line: *"The wind whispered through the trees."*

(1) Simile

(2) Personification

(3) Alliteration

(4) Metaphor

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31. Synonyms/Antonyms: What is the synonym of the word "Eloquent"?

(1) Simple

(2) Unclear

(3) Articulate

(4) Shy

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32. Idioms/Proverbs: Which of the following idioms means "to do something in a very energetic or enthusiastic manner"?

(1) To burn the midnight oil

(2) To break the ice

(3) To go the extra mile

(4) To hit the nail on the head
