KEAM 2026 Engineering April 18

Question Paper (Memory-Based)

Conducted by CEE Kerala

General Instructions

(i) **Duration:** The total duration of the examination is 3 hours (180 minutes).

(ii) **Total Marks:** The complete paper carries a maximum of 600 marks.

(iii) **Structure:** The paper has 3 Sections:

- **Section A:** 45 Multiple Choice Questions (Physics).
- **Section B:** 30 Multiple Choice Questions (Chemistry).
- **Section B:** 75 Multiple Choice Questions (Mathematics).

(iv) **Compulsory Questions:** All 150 questions are compulsory.

(v) Each question has four options. Only **one** option is correct.

(vi) **Correct Answer:** +4 marks.

(vii) **Incorrect Answer:** −1 (Negative marking).

(viii) **Unanswered/Marked for Review:** 0 marks.

Physics

1. The acceleration of a moving body is found from the:

(A) area under velocity-time graph

(B) area under displacement-time graph

(C) slope of distance-time graph

(D) slope of velocity-time graph

(E) area under acceleration-time graph

2. The time period of an earth's satellite revolving at a height of 35,800 km is

(A) 24 hours

(B) 100 minutes

(C) 12 hours

(D) 48 hours

(E) 52 hours

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3. For most of the materials, Young's modulus (Y) and rigidity modulus (G) are related as

(A) $G = 3Y$

(B) $G = \frac{Y}{3}$

(C) $G = \frac{3}{2}Y$

(D) $G = \frac{Y}{8}$

(E) $10G = 3Y$

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4. The pressure on an object of bulk modulus B undergoing hydraulic compression due to a stress exerted by surrounding fluid having volume strain $\frac{\Delta V}{V}$ is:

(A) $B^2\left(\frac{\Delta V}{V}\right)$

(B) $B\left(\frac{\Delta V}{V}\right)^2$

(C) $\frac{1}{B}\left(\frac{\Delta V}{V}\right)$

(D) $\frac{1}{B^2}\left(\frac{\Delta V}{V}\right)$

(E) $B\left(\frac{\Delta V}{V}\right)$

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5. When the displacement of a particle executing simple harmonic motion is half its amplitude, the ratio of its kinetic energy to potential energy is:

(A) 1 : 3

(B) 2 : 1

(C) 3 : 1

(D) 1 : 2

(E) 2 : 3

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6. When a magnetic field is applied on a stationary electron, it

(A) remains stationary

(B) spins about its own axis

(C) moves in the direction of the field

(D) moves perpendicular to the direction of the field

(E) moves opposite to the direction of the field

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7. The resistors $R_1 = 3\,\Omega$ and $R_2 = 1\,\Omega$ are connected in parallel to a 20 V battery. Find the heat developed in the resistor R_1 in one minute.

(A) 600 J

(B) 800 J

(C) 6000 J

(D) 8000 J

(E) 7000 J

Chemistry

8. Among the following, the molecule that will have the highest dipole moment is:

(A) H_2

(B) HI

(C) HBr

(D) HCl

(E) HF

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9. An odd electron molecule among the following is (2015)

(A) CO

(B) SO_2

(C) CO_2

(D) NO

(E) O_2

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10. Which one of the following is the correct relation between C_p and C_V for one mole of an ideal gas? (R is molar gas constant)

(A) $C_p = C_V - R$

(B) $C_p = C_V + R$

(C) $C_p = R - C_V$

(D) $C_p = C_V \times R$

(E) $C_p = C_V / R$

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11. Which of the following is a Lewis acid?

(A) HCl

(B) HO^-

(C) H2O

(D) Co^{3+}

(E) NH3

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12. The average oxidation state of sulphur in the tetrathionate ion is:

(A) +3

(B) +2.5

(C) +5

(D) +3.5

(E) +1.5

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13. Which of the following is an electron donating group?

(A) NO_2

(B) $-CH_3$

(C) $-COOH_4$

(D) -CN

(E) $-OC_6H_5$

Mathematics

14. If $ay = x + b$ is the equation of the line passing through the points (-5, -2) and (4, 7), then the value of $2a + b$ is equal to:

(A) 1

(B) 3

(C) 5

(D) -3

(E) -1

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15. The equation of perpendicular bisector of the line segment joining the points (10, 0) and (0, -4) is

(A) $5x + 2y = 21$

(B) $5x + 2y = 0$

(C) $2x - 5y = 21$

(D) $5x - 2y = 21$

(E) $2x + 3y = 21$

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16. The end-points of a diameter of a circle are $(-1, 4)$ and $(5, 4)$. Then the equation of the circle is

(A) $(x-3)^2 + y^2 = 9$

(B) $(x-3)^2 + (y+4)^2 = 3$

(C) $(x-2)^2+(y-4)^2=9$

(D) $(x+3)^2+(y+4)^2=9$

(E) $(x-3)^2+(y-4)^2=4$

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17. The foci of a hyperbola are (8,3) and (0,3) and eccentricity is $\frac{4}{3}$. Then the length of the transverse axis is:

(A) $\frac{32}{3}$

(B) 4

(C) 8

(D) $\frac{8}{3}$

(E) 6

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18. A set contains 9 elements. Then the number of subsets of the set which contains at most 4 elements is:

(A) 32

(B) 64

(C) 128

(D) 256

(E) 512

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19. If x^{22} is in the $(r+1)^{\text{th}}$ term of the binomial expansion of $(3x^3-x^2)^9$, then the value of r is equal to

(A) 3

(B) 4

(C) 5

(D) 6

(E) 7
