

KEAM 2026 Pharmacy April 20

Question Paper (Memory-Based)

Conducted by CEE Kerala



General Instructions

- (**Duration:** The total duration of the examination is 1.5 hours (90 minutes).
- (**Total Marks:** The complete paper carries a maximum of 300 marks.
- (**Structure:** The paper has 2 Sections:
 - **Section A:** 30 Multiple Choice Questions (Physics).
 - **Section B:** 45 Multiple Choice Questions (Chemistry).
- (**Compulsory Questions:** All 75 questions are compulsory.
- (Each question has four options. Only **one** option is correct.
- (**Correct Answer:** +4 marks.
- (**Incorrect Answer:** -1 (Negative marking).
- (**Unanswered/Marked for Review:** 0 marks.

PHYSICS

1. An object is placed at a distance of 30 cm from a convex lens of focal length 100 cm when it moves 5 cm towards the lens how much is the image being shifted?

2. If a magnet is cut into equal halves perpendicularly. What happens to magnetic moment?

(A) M

- (B) $\frac{M}{2}$
 - (C) $\frac{M}{3}$
 - (D) $\frac{3M}{2}$
-

3. In vertical circular motion, what is the minimum velocity at the lowest point?

4. Two cars A and B are starts moving from rest. Car A travels at a constant velocity of 20 m/s and car B moving with a constant acceleration of 4 m/s^2 . After how much time B will overtake A?

- (A) 5 s
 - (B) 10 s
 - (C) 15 s
 - (D) 20 s
 - (E) 25 s
-

5. For pure semiconductor

- (A) No. of electrons = number of holes
 - (B) No. of electrons $>$ number of holes
 - (C) No. of electrons $<$ number of holes
 - (D) None of these
-

6. A nucleus has a mass number of 56 and a binding energy per nucleon of 8.8 MeV, the total B.E is?

7. When an iron ball is moving through a fluid, its terminal velocity is proportional to

- (A) r^2
- (B) $\frac{1}{r}$

(C) r^{-2}

(D) \sqrt{r}

8. The position of a particle is given by $x = at + bt^{3/2}$ where a and b are constants and t is the time. Then dimension of $\frac{b}{a}$ is?

9. When a ball of mass 2.2 kg collides with a wall with a speed of 10 m/s and rebounds with a speed of 8 m/s. Find impulse.

10. A particle is subjected to a force $F = 3x^2$. Calculate the work done in moving with particle from $x=0$ to $x = 2$ m.

(A) 12 J

(B) 8 J

(C) 16 J

11. If m and 2m are two masses separated by a distance of 1 m are attracted by gravitational force. Then the acceleration of their centre of mass is?

12. Stopping potential is given by 1.8 eV, then what will be the maximum kinetic energy of photoelectrons?

13. Capacitance of an air filled parallel plate capacitor is C. Find capacitance when a dielectric of dielectric constant K is field in it.

14. Find new resistivity when radius doubles and length reduces by half of its original resistivity is ρ .

- (A) halved
 - (B) unchanged
 - (C) doubled
 - (D) tripled
 - (E) quadrupled
-

15. In v-t graph, if graph cuts time axis what does it indicate?

16. If a conductor of length 1 m carrying a current of 2 A is placed in a field of 0.2 T. What will be the force acting on it?

17. 2A of current is flowing through a wire of length 1 m. What is the amount of charge passing through it in 1 min?

- (A) 120 C
 - (B) 40 C
 - (C) 1 C
 - (D) 2C
 - (E) 10 C
-

18. Find the ratio of moment of inertia of ring to disc, about an axis passing through its centre?

- (A) 1 : 2
- (B) 2 : 1
- (C) 3 : 2
- (D) 2 : 3
- (E) 1 : 1

19. Light of wavelength 500 nm falls on a single slit of width 0.1 mm. Angular position of 1st minimum is

- (A) $\sin^{-1}(0.05)$
- (B) $\sin^{-1}(0.2)$
- (C) $\sin^{-1}(0.5)$
- (D) $\sin^{-1}(0.0025)$
- (E) $\sin^{-1}(0.005)$

20. A particle executes SHM with time period T. If acceleration is doubled keeping amplitudes constant, new time period is

- (A) T
- (B) $\frac{T}{2}$
- (C) 2T
- (D) $\frac{T}{\sqrt{2}}$
- (E) $\sqrt{2}T$

21. Electric flux through a closed surface depends on

- (A) Area of flux
- (B) Volume
- (C) Charge enclosed
- (D) Shape
- (E) Electric field outside it

22. Angular velocity of geostationary satellite is (in rad hr^{-1}).

- (A) $\frac{\pi}{365}$
- (B) $\frac{\pi}{24}$
- (C) $\frac{\pi}{12}$

(D) $\frac{\pi}{18}$

23. In an AC circuit, $R = 2\pi^2\Omega$, $L = 0.02\pi\text{H}$ and is powered by an AC voltage of frequency 50 Hz. Find impedance of the circuit ?

24. Find velocity of em wave in terms of C if $\epsilon_r = 4$ and $\mu_r = 1$.

(A) C

(B) $\frac{C}{2}$

(C) 2C

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

(E) $\frac{C}{4}$

25. Water is flowing through a tube of radius r at constant velocity with power P. What happens to power when radius of the tube doubled?

26. Pressure of liquid inside a vessel depends on?

CHEMISTRY

1. Arrange the isoelectronic species in increasing order of ionic radius:

Al^{3+} , Na^+ , F^- , O^{2-}

(i) $\text{Al}^{3+} < \text{Na}^+ < \text{F}^- < \text{O}^{2-}$

(ii) $\text{O}^{2-} < \text{F}^- < \text{Na}^+ < \text{Al}^{3+}$

(iii) $\text{Na}^+ < \text{F}^- < \text{Al}^{3+} < \text{O}^{2-}$

(iv) $\text{F}^- < \text{Na}^+ < \text{O}^{2-} < \text{Al}^{3+}$

2. Which among the following is most basic in aqueous medium

- (i) Benzenamine
 - (ii) N-ethylethanamine
 - (iii) N,N-diethylethanamine
 - (iv) Methylamine
-

3. Which of the following lanthanoid ion is colored?

- (A) Lu^{3+}
 - (B) Sm^{2+}
 - (C) Yb^{2+}
 - (D) La^{3+}
-

4. IUPAC name of the compound $[\text{Co}(\text{NH}_3)_5\text{ONO}]\text{Cl}_2$ is

5. Oxidation state of oxygen in H_2O_2

6. Formula of Hinsberg reagent?

- (A) $\text{C}_6\text{H}_5\text{SOCl}$
 - (B) $\text{C}_6\text{H}_5\text{SO}_2\text{Cl}$
 - (C) $\text{C}_6\text{H}_5\text{SOCl}_2$
 - (D) $\text{C}_6\text{H}_5\text{SO}_2\text{Cl}_2$
-

7. Find the bond length of O – H in methanol

- (A) 96 pm
 - (B) 141 pm
-

- (C) 136 pm
(D) 145 pm
(E) 86 pm
-

8. Match the following

Compound	Stock notation of oxidation number
a) MnO	i) III
b) Mn ₂ O ₃	ii) II
c) MnO ₂	iii) IV
d) Fe ₂ O ₃	iv) I

- (A) a-i, b-ii, c-iii, d-iv
(B) a-ii, b-iv, c-iii, d-i
(C) a-ii, b-i, c-iii, d-iv
(D) a-i, b-ii, c-iv, d-iii
-

9. Which among the following elements shows same atomic radius?

- (A) Mo & W
(B) Ti & La
(C) Ag & Ni
(D) Mn & S
(E) U & W
-

10. Which of the following yields Tarry product during oxidation:

- (A) oxidation of aniline by nitric acid (Nitration of aniline)
(B) Sulphonation of aniline
(C) Bromination of aniline
(D) Friedal carft alkylation of aniline
(E) Friedal craft acylation of aniline
-

11. Which of the following has Van't Hoff factor (i) 1.82? (m = 0.01)

- (A) K_2SO_4
 - (B) $MgSO_4$
 - (C) $NaCl$
 - (D) HCl
 - (E) KCl
-

12. Find the % of composition of carbon in methane:

- (A) 25%
 - (B) 75%
 - (C) 20%
 - (D) 80%
 - (E) 90%
-

13. For a reaction $N_2 + O_2 \rightleftharpoons 2NO$. Given that $[N_2] = 2 \times 10^{-3}$, $[O_2] = 3 \times 10^{-3}$, $[NO] = 6 \times 10^{-6}$
Find the value of K_c for the reaction

14. Find the rate constant of a first order reaction $A \rightarrow B$ reaction where $t_{1/2} = 10$ minutes at 300 K is (Given $\log 2 = 0.3$)

- (A) $1.15 \times 10^{-1} s^{-1}$
 - (B) $1.15 \times 10^{-3} s^{-1}$
 - (C) $2.15 \times 10^{-1} s^{-1}$
 - (D) $2.15 \times 10^{-3} s^{-1}$
-

15. Which of the following orbitals donot have 4 lobes?

- (A) d_{xy}
- (B) d_{xz}

- (C) d_{zy}
 - (D) $d_{x^2-y^2}$
 - (E) d_{z^2}
-

16. For a 1st order reaction, 99% complete in 20 minutes, then the $t_{1/2}$ will be : ($\log 2 = 0.3$)

- (A) 10 min
 - (B) 5 min
 - (C) 3 min
 - (D) 2 min
-

17. IUPAC official name for the element shows atomic number 110?

- (A) Darmstadtium
 - (B) Roentgenium
 - (C) Meitnerium
 - (D) Copernicium
 - (E) Nihonium
-

18. When sodium fusion extract of a compound is boiled with Iron (II)sulphate and then acidified with conc.sulphuric acid blood red colour is produced. The compound is —?

- (A) NH_2CONH_2
 - (B) $\text{C}_6\text{H}_5\text{NH}_2$
 - (C) $\text{C}_6\text{H}_5\text{SO}_3\text{H}$
 - (D) $\text{H}_2\text{N}-\text{C}_6\text{H}_4-\text{SO}_3\text{H}$
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19. 1-phenyl-2-chlorobutane on reaction with EtOH/EtOK produces a product which on treatment with HBr produces

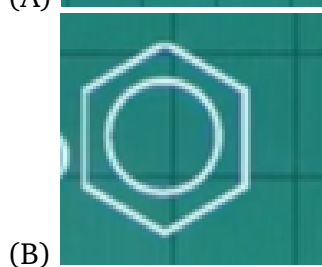
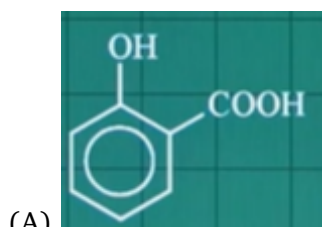
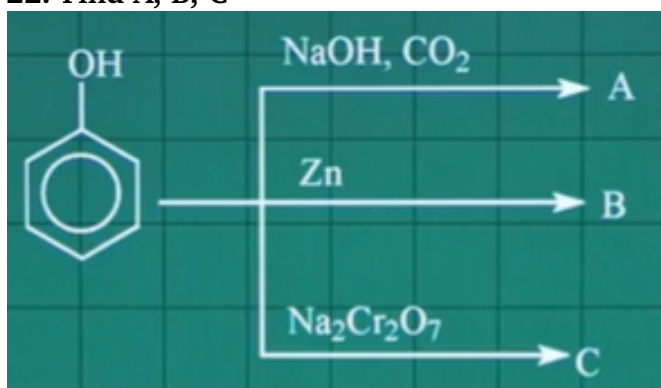
20. For chemical reaction $M \rightarrow N$, the rate becomes 8 times when the concentration of M doubles, find the order of reaction with respect to M?

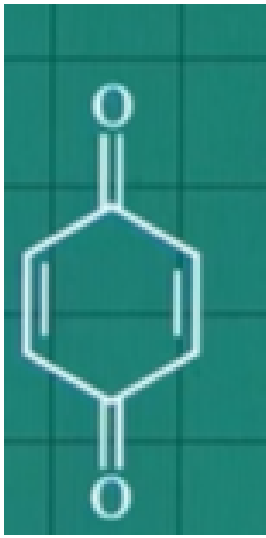
- (A) 0
 - (B) 1
 - (C) 2
 - (D) 3
-

21. Which is incorrect regarding Bohr model?

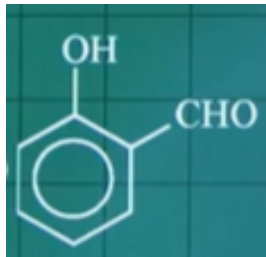
- (A) Applicable to 1 electron system
 - (B) Applicable to multielectron system
 - (C) Electrons revolve in non-radiating orbits
 - (D) Angular momentum is quantised
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22. Find A, B, C

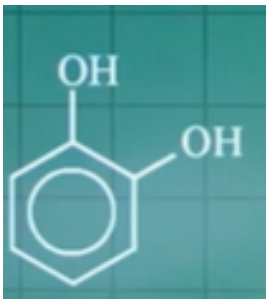




(C)



(D)



(E)