

KEAM 2026 Pharmacy April 19

Question Paper

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(Pharmacy)

1. If orbital radius of geostationary satellite decreases, gravitational potential energy

- (A) Increases
- (B) Decreases
- (C) Remains same

2. A ball falls from a height of 20 m, and then bounces back up to 17 m height. The loss of energy is

3. A body of mass 'm' is acted upon by two perpendicular forces 4N and 3N. Find mass 'm' if acceleration of a body is 2 m/s^2

4. The work function for a metal having threshold frequency $5 \times 10^7 \text{ Hz}$ is?

5. An effective power of a combination of 5 identical convex lens having focal length $f = 20 \text{ cm}$ is

6. Potential difference between two points in a region having uniform electric field of 800 N/C is 16V. Find the distance between two points.

7. In a Young's double slit experiment with a light having wavelength 500 nm, separation between slit is 0.2 mm, distance between slit and screen is 2m. Find fringe width.

8. What is the specific heat capacity at constant volume for non-rigid diatomic gas.

9. A constant current of 3A flows through a conductor having potential difference of 200V. Find heat developed in conductor in 25s.

10. In a forward biased semiconductor potential changes from 0.9V to 0.6 V. Find current if resistance is 1Ω

- (A) 300 mA
 - (B) 200 mA
 - (C) 450 mA
-

11. If external force acting on a body is zero, centre of mass of body

- (A) decreases
 - (B) remains constant
 - (C) increases
 - (D) first increases then decreases
-

12. A cyclotron has frequency f and energy E . If the energy is doubled, frequency becomes

- (A) f
 - (B) $2f$
 - (C) $\frac{f}{2}$
 - (D) $4f$
-

13. Which of the following is diamagnetic

- (A) Bi
 - (B) Gd
 - (C) Co
 - (D) Na
 - (E) Fe
-

14. Which of the following is incorrect

- (A) Stress is not a vector quantity.
- (B) Young's modulus is only applicable for solids.
- (C) Compressibility is applicable for solids, liquids and gases.
- (D) Young's modulus is greater for elastomers than metal.

15. If fundamental frequency of an open pipe is 200 Hz, then find the fundamental frequency if one end is closed.

16. Energy of electron of hydrogen atom in 3rd excited state is

17. The displacement of a body at any time t is given by

$$x = -\frac{3}{4}t^2 + 12t + 3$$

The velocity of the body is zero after:

18. Two syringes have piston in the ratio 1 : 5. If the pressure exerted in both syringes is same, find the ratio of the forces applied on the piston.

19. A spring of spring constant 'k' cut into n pieces. What is the spring constant of each piece?

- (A) $\frac{k}{n}$
 - (B) $\frac{n}{k}$
 - (C) $\frac{n^2}{k}$
 - (D) nk
-

20. The capacitance of a capacitor is C when there is air (or vacuum) between its plates. When a dielectric is completely inserted between the plates, the capacitance becomes $2C$. Find the dielectric constant of the material.

21. $\vec{P} = x\hat{i} + 0.8\hat{j} + 0.6\hat{k}$

If magnitude of $\vec{P}$ is 2, value of x is

- (A) $\sqrt{3}$
 - (B) 2
 - (C) $\sqrt{2}$
 - (D) 1
-

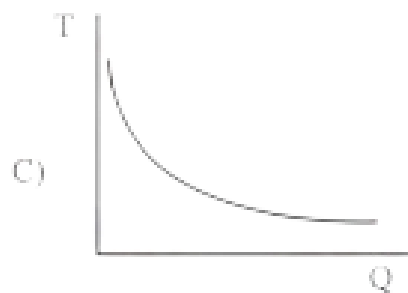
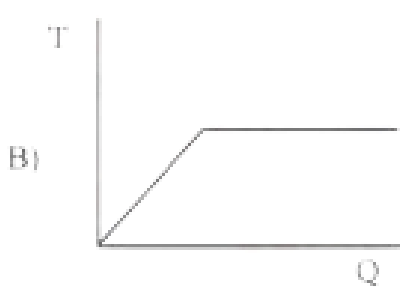
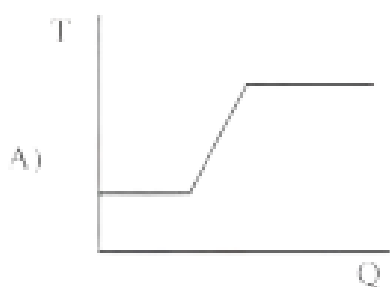
22. A particle moves in a circular path of radius 4 cm

23. A particle moves in a circular path of radius 4 cm. It completes 5 revolutions in 2 minutes. Find its linear velocity.

24. In simple harmonic motion (SHM), the acceleration of a particle at a displacement of 3m from the mean position is 48 m/s^2 directed towards the mean position. Find the angular frequency.

25. The force experienced by the Earth due to solar radiation is $9 \times 10^9 \text{ N}$. Find the radiation pressure on Earth. (Radius of Earth $R = 6.4 \times 10^6 \text{ m}$)

26. When ice at 0°C is heated and converted into steam at 100°C , which graph correctly represents the variation of temperature with heat supplied?



Chemistry

1. Reagent used to convert decanol to decanoic acid

- (A) Tollen's reagent
 - (B) Jones reagent
 - (C) Grignard reagent
 - (D) Fehling's reagent
 - (E) DIBAC-H
-

2. IUPAC name of $(\text{CH}_3)_3\text{C}-\text{CH}_2\text{Br}$

3. Geometry of a molecule AB_3E_2 with 3 bond pairs and 2 lone pairs

4. Which do not form carbylamine

- (A) Ethanamines
 - (B) Benzamine
 - (C) Prop-2-amine
 - (D) Propan-1-amine
 - (E) N-methylethanamine
-

5. Which transition metal has more than one metallic structure at normal temperature?

- (A) Cr
 - (B) Ni
 - (C) Mn
-

- (D) V
(E) Cu
-

6. An organic compound $C_5H_{10}O$ does not reduce Tollen's reagent but forms addition compound with sodium hydrogen sulphite and gives the Iodoform test. On vigorous oxidation, it gives ethanoic acid and propanoic acid.

7. Which are complex reaction

- (i) Oxidation of ethane
 - (ii) Thermal decomposition of HI on gold surface
 - (iii) Saponification of methyl acetate
 - (iv) Nitration of phenol
 - (v) Decomposition of NH_3 on hot Pt surface
-

8. Conc. of H ions in HCl solution is $3 \times 10^{-3}M$ then $pH = \text{---}$?

9. Mass of ethanoic acid required to prepare 0.5m solution containing 100g of water?

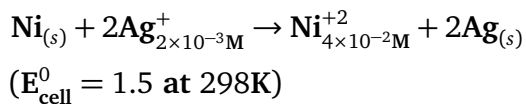
10. Spin only magnetic moment given not correct is

- (A) Ni^{2+} (4.73)
 - (B) Fe^{2+} (4.90)
 - (C) Ti^{2+} (2.84)
 - (D) Co^{2+} (3.89)
 - (E) Mg^{2+} (5.92)
-

11. Minimum energy required to remove an atom from sodium is $3.313 \times 10^{-19}g$. Maximum

wavelength of radiation that will get photoelectron

12. Find the emf of the reaction at 298K



13. $\text{X}_2 + \text{O}_2 \rightleftharpoons 2\text{XO}$

Concentration of X_2 and O_2 are 4×10^{-3} and 3×10^{-3} respectively. Equilibrium concentration of XO ($K_c = 0.5$)

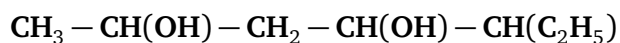
14. Which pairs have ability to form $p\pi - p\pi$ multiple bonds

- (A) C and O
 - (B) B and N
 - (C) N and P
 - (D) F and Cl
 - (E) C and Si
-

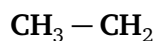
15. Pyridinium chlorochromate is a complex of

16. In Chemotherapy, ligand used to remove excess of Cu

17. IUPAC name of



|



18. Which are carcinogenic hydrocarbon

- (i) 1,2 - Benzanthracene
- (ii) pent-1-yne
- (iii) 1,2 - Benpyrene
- (iv) cyclohexane
- (v) 3-methyl cholanthrene

19. Metals used in preparation of dihydrogen in lab

20. Volume of methanol to make 2L of 0.4M solution

(density = 0.64 Kg L^{-1} , MM = 32 g mol^{-1})

21. Enthalpy of combustion of benzene, graphite, dihydrogen are -3260 , -390 and -290 kJ/mol . Find the enthalpy of formation of benzene
