KEAM 2026 Engineering April 21

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. The semi-major axis of the orbit of Saturn is approximately nine times that of Earth. The time period of revolution of Saturn is approximately equal to

(A) 81 years

(B) 27 years

(C) 729 years

(D) $\sqrt[3]{81}$ years

(E) 9 years

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2. Two strings of the same material and same length are given equal tension. If they are vibrating with fundamental frequencies 1600 Hz and 900 Hz, then the ratio of their respective diameters is

(A) 16 : 9
(B) 4 : 3
(C) 81 : 256
(D) 3 : 4
(E) 9 : 16

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3. On an average, the number of neutrons and the energy of a neutron released per fission of a uranium atom are respectively

(A) 2.5 and 2 keV
(B) 3 and 1 keV
(C) 2.5 and 2 MeV
(D) 2 and 2 keV
(E) 1 and 2 MeV

CHEMISTRY

4. An example of electrophilic substitution reaction is :

(A) Chlorination of methane
(B) Conversion of methyl chloride to methyl alcohol
(C) Nitration of benzene
(D) Formation of ethylene from ethyl alcohol.

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5. Which has minimum bond angle?

(A) NH_3

(B) H_2O

(C) PH_3

(D) H_2S

(E) SO_2

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6. One mole of an alkene on ozonolysis gives a mixture of one mole pentan-3-one and one mole methanal. The alkene is

(A) 3-ethylbut-1-ene

(B) 2-methylpent-1-ene

(C) 2-ethylbut-1-ene

(D) 4-methylpent-2-ene

(E) 4-methylpent-1-ene

Maths

7. Consider the following statements :

(i) For every positive real number x, $x-10$ is positive.

(ii) Let n be a natural number. If n^2 is even, then n is even.

(iii) If a natural number is odd, then its square is also odd.

Then

(A) (i) False, (ii) True and (iii) True

(B) (i) False, (ii) False and (iii) True

(C) (i) True, (ii) False and (iii) True

(D) (i) True, (ii) True and (iii) True

(E) (i) False, (ii) True and (iii) False

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8. The principal argument of the complex number $z = \frac{8+4i}{1+3i}$ is equal to

(A) $\frac{\pi}{4}$
(B) $\frac{-\pi}{4}$
(C) $\frac{3\pi}{4}$
(D) $\frac{-3\pi}{4}$
(E) $\frac{\pi}{6}$

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9. The number of arrangements containing all the seven letter of the word ALRIGHT that begins with LG is

(A) 720
(B) 120
(C) 600
(D) 540
(E) 760

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10. Evaluate the integral: $\int \frac{1}{x^3}\sqrt{1-\frac{1}{x^2}}dx =$

(A) $\frac{-1}{6}\left(1-\frac{1}{x^2}\right)^{\frac{3}{2}} + C$
(B) $\frac{1}{3}\left(1-\frac{1}{x^2}\right)^{\frac{3}{2}} + C$
(C) $\frac{-1}{3}\left(1-\frac{1}{x^2}\right)^{\frac{3}{2}} + C$
(D) $\frac{4}{3}\left(1-\frac{1}{x^2}\right)^{\frac{3}{2}} + C$
(E) $\frac{-4}{3}\left(1-\frac{1}{x^2}\right)^{\frac{3}{2}} + C$

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11. If $-1+7i$, $-1+xi$ and $3+3i$ are the three vertices of an isosceles triangle which is right angled at $-1+xi$, then the value of x is equal to

(A) -1
(B) 3
(C) -3
(D) 7

(E) -7

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12. The three vertices of a triangle are $(0,0)$, $(3,1)$ and $(1,3)$. If this triangle is inscribed in a circle, then the equation of the circle is

(A) $2x^2+2y^2-2x-6y=0$

(B) $x^2+y^2-3x-y=0$

(C) $x^2+y^2-x-3y=0$

(D) $2x^2+2y^2-6x-2y=0$

(E) $2x^2+2y^2-5x-5y=0$
