

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.

MATHEMATICS

1. If $3(z - i) = 2 - i$, then find the value of $z^2 =$

2. If $\int_a^b x^3 dx = 0$ and $\int_a^b x^2 dx = \frac{2}{3}$. Find a and b

3. $\cos^{-1}\left(\frac{-\sqrt{3}}{2}\right) + \sin^{-1}\left(\frac{1}{2}\right) =$ **Find the angle**

4. If $2 \tan\left(\frac{\pi}{4} + \theta\right) = 4$ then $\sin 2\theta = ?$

5. $\frac{1}{8!} + \frac{1}{9!} = \frac{x}{12!}$ **Find x**

6. If $P(A) = \frac{1}{4}$, $P(B) = \frac{1}{5}$ and $P(A \cap B) = \frac{1}{8}$ then find $P(A'|B')$

7. Find the value of λ if $\begin{bmatrix} 3 & \lambda - 1 \\ 2 & 3 \end{bmatrix} \begin{bmatrix} 3 & -1 \\ 2 & 1 \end{bmatrix} = \begin{bmatrix} 7 & 0 \\ 1 & 2 \end{bmatrix}$

8. If the directrix of the parabola $y^2 - kx + 4 = 0$ is $x - 1 = 0$, then find the value of k .
