

MHT CET 2026 April 11 Shift 2

Question Paper

Conducted by CET Cell, Maharashtra



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 200 marks.
- (iii) **Structure:** The paper has 3 Sections:
- **Section A:** 50 Multiple Choice Questions (Physics)
 - **Section B:** 50 Multiple Choice Questions (Chemistry)
 - **Section C:** 50 Multiple Choice Questions (Mathematics)
- (iv) **Compulsory Questions:** All 150 questions are compulsory.
- (v) Each question has four options. Only **one** option is correct.
- (vi) **Right Answer:** +1 marks.
- (vii) **Incorrect Answer:** (No Negative marking).
- (viii) **Unanswered/Marked for Review:** 0 marks.

Mathematics

1. If $\cos 4x = \cos 3x$, find the general solution for x .

- (A) $x = 2n\pi$ or $x = \frac{2n\pi}{7}$, where $n \in \mathbb{Z}$
- (B) $x = n\pi$ or $x = \frac{n\pi}{7}$, where $n \in \mathbb{Z}$
- (C) $x = \frac{2n\pi}{7}$ only
- (D) $x = 2n\pi$ only

2. Evaluate the integral: $\int \frac{\sin x}{\sin 4x} dx$

- (A) $-\frac{1}{8} \log \left| \frac{1+\sin x}{1-\sin x} \right| + \frac{1}{4\sqrt{2}} \log \left| \frac{1+\sqrt{2}\sin x}{1-\sqrt{2}\sin x} \right| + C$
(B) $\frac{1}{8} \log \left| \frac{1+\sin x}{1-\sin x} \right| - \frac{1}{4\sqrt{2}} \log \left| \frac{1+\sqrt{2}\sin x}{1-\sqrt{2}\sin x} \right| + C$
(C) $-\frac{1}{8} \log \left| \frac{1+\sin x}{1-\sin x} \right| + \frac{1}{4\sqrt{2}} \log \left| \frac{1-\sqrt{2}\sin x}{1+\sqrt{2}\sin x} \right| + C$
(D) None of these
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3. Find the eigenvalues of the matrix $A = \begin{pmatrix} 0 & 0 & -1 \\ 0 & -1 & 0 \\ 0 & 0 & -1 \end{pmatrix}$.

- (A) 0, 1, 1
(B) 0, -1, -1
(C) 1, -1, 0
(D) -1, -1, -1
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4. Consider the following logical statements:

R: If $p \rightarrow q$ is false, then $p \vee q$ is false.

S: If $p \leftrightarrow q$ is false, then $p \vee q$ is false.

Evaluate the truth values of R and S.

- (A) Both R and S are true
(B) R is true and S is false
(C) R is false and S is true
(D) Both R and S are false
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5. Evaluate the integral: $\int \frac{2x}{x^2-5x+4} dx$

- (A) $\frac{8}{3} \log|x-4| - \frac{2}{3} \log|x-1| + C$
(B) $\frac{2}{3} \log|x-4| - \frac{8}{3} \log|x-1| + C$
(C) $\frac{8}{3} \log|x-1| - \frac{2}{3} \log|x-4| + C$
(D) $\frac{2}{3} \log|x-1| - \frac{8}{3} \log|x-4| + C$
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