

RBSE Class 12 Mathematics Question Paper 2026

Time Allowed :3 Hour	Maximum Marks :100	Total Questions :38
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General Instructions

Read the following instructions very carefully and strictly follow them:

1. Section A is compulsory for all candidates and generally includes objective-type questions, short answer questions, and long answer questions from the prescribed syllabus.
2. In Section A, candidates are required to answer all questions. The questions will cover topics from ancient, medieval, and modern history as prescribed by the syllabus.
3. Section B consists of elective questions. Candidates are required to attempt questions from the chosen topic according to the provided options.
4. The questions in Section A will be in the form of multiple-choice, short answer, and essay-type questions.
5. Answers to all questions must be written in neat and legible handwriting. Candidates must adhere strictly to the word limit mentioned in the questions.
6. Use of unfair means or electronic devices during the examination is strictly prohibited.
7. Candidates must ensure that they write their answers in the correct format, following the instructions given for each section.

1. If $f : \mathbb{R} \rightarrow \mathbb{R}$ be given by $f(x) = (3 - x^3)^{\frac{1}{3}}$, then $f(f(x))$ is equal to

- (A) $x^{\frac{1}{3}}$
- (B) x^3
- (C) x
- (D) $(3 - x^3)$

2. The principal value of $\sin^{-1} \left(\frac{1}{\sqrt{2}} \right)$ is

- (A) $\frac{\pi}{4}$
- (B) $\frac{\pi}{6}$
- (C) $\frac{\pi}{3}$
- (D) $\frac{\pi}{2}$

3. $A = [a_{ij}]_{m \times n}$ is a square matrix, if

- (A) $m < n$
- (B) $m > n$
- (C) $m = n$
- (D) None of these

4. $A = \begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & -1 & 3 \\ -1 & 0 & 2 \end{bmatrix}$, then the $(2A - B)$ will be

- (A) $\begin{bmatrix} -1 & 5 & 3 \\ 5 & 6 & 0 \end{bmatrix}$
- (B) $\begin{bmatrix} 5 & -1 & 3 \\ 5 & 6 & 0 \end{bmatrix}$
- (C) $\begin{bmatrix} 2 & 4 & 6 \\ 4 & 6 & 2 \end{bmatrix}$
- (D) $\begin{bmatrix} -3 & 1 & -3 \end{bmatrix}$

5. Value of $\begin{vmatrix} x^2 - x + 1 & x - 1 \\ x + 1 & x + 1 \end{vmatrix}$ will be

- (A) $x^2 - x + 2$
- (B) $x^3 + x^2 - 2$
- (C) $x^3 - x^2 + 2$
- (D) $x^3 + x^2 + 4$

6. If $2x + 3y = \sin y$, then $\frac{dy}{dx}$ is equal to

- (A) $\frac{3}{\sin y - 2}$
- (B) $\frac{2}{\cos y - 3}$
- (C) $\frac{\cos y + 3}{2}$
- (D) $\frac{2}{\cos y}$

7. $y = \cos^{-1} \left(\frac{1-x^2}{1+x^2} \right)$, $0 < x < 1$, then $\frac{dy}{dx}$ is equal to

- (A) $\frac{1}{1+x^2}$
 - (B) $\frac{2}{4+x}$
 - (C) $\frac{2}{1+x^2}$
 - (D) $\frac{2}{x+x^2}$
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8. The rate of change of the area of a circle with respect to its radius r at $r = 5$ cm is

- (A) 12π
 - (B) 8π
 - (C) 5π
 - (D) 10π
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9. $\int \frac{dx}{\sin^2 x \cos^2 x}$ equals

- (A) $\tan x + \sin x + c$
 - (B) $\tan x - \cot x + c$
 - (C) $\tan x \cot x + c$
 - (D) $2 \tan x - \cot 2x + c$
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10. Area of the region bounded by the curve $y^2 = 4x$, y -axis and the line $y = 3$ is

- (A) 2
 - (B) $\frac{4}{9}$
 - (C) $\frac{9}{4}$
 - (D) $\frac{9}{2}$
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11. The order of the differential equation $2x^2 \frac{d^2 y}{dx^2} - 3 \frac{dy}{dx} + y = 0$ is

- (A) 2
 - (B) 1
 - (C) 0
 - (D) Not defined
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12. Which of the following is a vector quantity?

- (A) Time
 - (B) Volume
 - (C) Force
 - (D) Speed
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13. The sum of the vectors $a = i - 2j + k$, $b = -2i + 4j + 5k$ and $c = i - 6j - 7k$ is

- (A) $-4j - k$
 - (B) $4i - k$
 - (C) $4j + 5k$
 - (D) $i + 4j - k$
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14. The unit vector in the direction of the vector $\vec{a} = \hat{i} + \hat{j} + 2\hat{k}$ is

- (A) $\frac{\hat{i} + \hat{j} + 2\hat{k}}{\sqrt{5}}$
 - (B) $\frac{\hat{i} + \hat{j} + \hat{k}}{\sqrt{6}}$
 - (C) $\frac{2\hat{i} + \hat{j} + \hat{k}}{\sqrt{6}}$
 - (D) $\frac{\hat{i} + \hat{j} + 2\hat{k}}{\sqrt{6}}$
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15. If the straight lines $\frac{x+1}{1} = \frac{y+2}{\lambda} = \frac{z-1}{-1}$ and $\frac{x-1}{-\lambda} = \frac{y+1}{2} = \frac{z+1}{1}$ are perpendicular to each other, then the value of " λ " is

- (A) 0
 - (B) 1
 - (C) 2
 - (D) 3
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16. Two cards are drawn at random without replacement from a pack of 52 playing cards, then the probability that both the cards are black in color is:

- (A) $\frac{1}{2}$
- (B) $\frac{1}{12}$
- (C) $\frac{25}{102}$

(D) $\frac{1}{4}$

17. If a pair of dice is thrown, then the probability of getting an even prime number on each die will be

- (A) $\frac{1}{3}$
 - (B) $\frac{1}{12}$
 - (C) $\frac{1}{36}$
 - (D) 0
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18. $\sin^{-1} x$ is a function whose domain is _____.

19. The value of determinant $\Delta = \begin{vmatrix} 1 & -2 & 4 \\ -1 & 3 & 0 \\ 4 & 1 & 0 \end{vmatrix}$ is -5 .

20. The edge of a variable cube is increasing at the rate of 3 cm/s. The volume of the cube is increasing at the rate of _____ while the edge is 10 cm long.

21. $\int (2x - 3 \cos x + e^x) dx =$ _____.
