

Done

# SAMPLE QUESTION PAPER 1

A Highly Simulated Sample Question Paper for ISC Class XII

# MATHEMATICS (Fully Solved)

### GENERAL INSTRUCTIONS

1. The Question Paper consists of three sections A, B and C.
2. Candidates are required to attempt all questions from **Section A** and all questions **either** from **Section B** or **Section C**.
3. **Section A**: Internal choice has been provided in two questions of two marks each, two questions of four marks each and two questions of six marks each.
4. **Section B**: Internal choice has been provided in one question of two marks and one question of four marks.
5. **Section C**: Internal choice has been provided in one question of two marks and one question of four marks.
6. All working, including rough work, should be done on the same sheet as, and adjacent to the rest of the answer.
7. The intended marks for questions or parts of questions are given in brackets [ ].
8. Mathematical tables and graph papers are provided.

Time : 3 Hours

Max. Marks : 80

FULLY SOLVED

### Section A (65 Marks)

1. In sub-parts (i) to (x) choose the correct option and in sub-parts (xi) to (xv), answer the questions as instructed. (15 x 1)

- X (i) If the binary operation  $*$  defined on  $Q$ , is defined as  $a * b = 2a + b - ab, \forall a, b \in Q$ , then the value of  $3 * 4$  is:
- (a) 2 (b) -2 (c) 3 (d) -3
- (ii) Let  $A = \{1, 2, 3, \dots, n\}$  and  $B = \{a, b\}$ . Then, the number of surjection from  $A$  into  $B$  is
- (a)  ${}^n P_n$  (b)  $2^n - 2$  (c)  $2^n - 1$  (d) None of these
- (iii) Value of  $\sin\left(2 \sin^{-1} \frac{3}{5}\right)$  is
- (a)  $\frac{12}{25}$  (b)  $\frac{24}{25}$  (c)  $\frac{13}{25}$  (d)  $\frac{17}{25}$
- (iv) If  $A = \begin{bmatrix} 2 & 3 \\ 1 & 2 \end{bmatrix}, B = \begin{bmatrix} 1 & 3 & 2 \\ 4 & 3 & 1 \end{bmatrix}, C = \begin{bmatrix} 1 \\ 2 \end{bmatrix}$  and  $D = \begin{bmatrix} 4 & 6 & 8 \\ 5 & 7 & 9 \end{bmatrix}$ , then which of the sum is defined?
- (a)  $A + B$  (b)  $C + D$  (c)  $B + C$  (d)  $B + D$
- (v) If  $\begin{bmatrix} 1 & 2 \\ -2 & -b \end{bmatrix} + \begin{bmatrix} 0 \\ 3 \end{bmatrix} = \begin{bmatrix} 5 & 6 \\ 1 & 0 \end{bmatrix}$ , then  $a^2 + b^2$  is equal to
- (a)  $20^{-1}$  (b) 22 (c) 12 (d) 10

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**Patrick Vollmar**



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## **Table of Contents Maths Paper1 Nated**

1. Understanding the eBook Maths Paper1 Nated
  - The Rise of Digital Reading Maths Paper1 Nated
  - Advantages of eBooks Over Traditional Books
2. Identifying Maths Paper1 Nated
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Maths Paper1 Nated
  - User-Friendly Interface
4. Exploring eBook Recommendations from Maths Paper1 Nated
  - Personalized Recommendations
  - Maths Paper1 Nated User Reviews and Ratings
  - Maths Paper1 Nated and Bestseller Lists
5. Accessing Maths Paper1 Nated Free and Paid eBooks
  - Maths Paper1 Nated Public Domain eBooks
  - Maths Paper1 Nated eBook Subscription Services
  - Maths Paper1 Nated Budget-Friendly Options
6. Navigating Maths Paper1 Nated eBook Formats

- ePub, PDF, MOBI, and More
  - Maths Paper1 Nated Compatibility with Devices
  - Maths Paper1 Nated Enhanced eBook Features
7. Enhancing Your Reading Experience
- Adjustable Fonts and Text Sizes of Maths Paper1 Nated
  - Highlighting and Note-Taking Maths Paper1 Nated
  - Interactive Elements Maths Paper1 Nated
8. Staying Engaged with Maths Paper1 Nated
- Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Maths Paper1 Nated
9. Balancing eBooks and Physical Books Maths Paper1 Nated
- Benefits of a Digital Library
  - Creating a Diverse Reading Collection Maths Paper1 Nated
10. Overcoming Reading Challenges
- Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
11. Cultivating a Reading Routine Maths Paper1 Nated
- Setting Reading Goals Maths Paper1 Nated
  - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Maths Paper1 Nated
- Fact-Checking eBook Content of Maths Paper1 Nated
  - Distinguishing Credible Sources
13. Promoting Lifelong Learning
- Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
14. Embracing eBook Trends
- Integration of Multimedia Elements
  - Interactive and Gamified eBooks

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