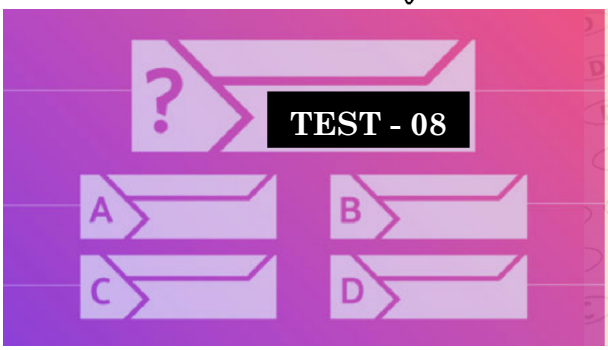
For Video Solutions
CLICK HERE



By O.P. GUPTA

MULTIPLE CHOICE TYPE QUESTIONS

For CBSE 2026 Exams - Mathematics (041) - Class 12

Topics : Application Of Integrals **Max. Marks : 15**

☑ ***Select the correct option in the followings. Each question carries 1 mark.***

Q01. The area of the curve $x^2 + y^2 = 25$ is given by

(a) $4\int_0^5 \sqrt{25 - y^2}\,dx$ (b) $\int_0^5 \sqrt{25 - x^2}\,dx$

(c) $2\int_0^5 \sqrt{25 - x^2}\,dx$ (d) $4\int_0^5 \sqrt{25 - x^2}\,dx$

Q02. Area between the curve $y = \cos x$ and x-axis, when $0 \le x \le \frac{\pi}{2}$ is

(a) 3 (b) 2 (c) 1 (d) 4

Q03. The area enclosed by the curve $y = \sin x$ and $x = 0$ to $x = \frac{\pi}{2}$, is

(a) 1 (b) 2 (c) π (d) 2π

Q04. What is the area of parabola (in square units) $y^2 - x = 0$, bounded by its latus-rectum?

(a) $\frac{1}{12}$ (b) $\frac{1}{6}$ (c) $\frac{1}{3}$ (d) $\frac{32}{3}$

Q05. If the area bounded by the parabola $x^2 = 4y$, the x-axis and the line $x = 4$ is divided into two equal areas by the line $x = a$, then the value of a is

(a) $(2)^{\frac{1}{3}}$ (b) $(2)^{\frac{2}{3}}$ (c) $(2)^{\frac{4}{3}}$ (d) $(2)^{\frac{5}{3}}$

Q06. Area bounded by the curve $y^2 = x$, $y = 0$, $x = 1$ and $x = 4$ in the first quadrant, is

(a) $\frac{14}{3}$ (b) $\frac{28}{5}$ (c) $\frac{3}{28}$ (d) None of these

theoguptaclasses (+919650350480)

Q07. Area bounded by the parabola $y^2 = 4ax$ and its latus-rectum, is

(a) $8a^2$ (b) $\frac{4a^2}{3}$ (c) $\frac{8a^2}{3}$ (d) $\frac{3a^2}{4}$

Q08. The area bounded by the parabola $y^2 = 8x$ and its latus-rectum is

(a) $\frac{16}{3}$ (b) $\frac{32}{3}$ (c) $\frac{8}{3}$ (d) $\frac{64}{3}$

Q09. The area of the region bounded by the curve $9x^2 + 4y^2 - 36 = 0$ (in first quadrant) is

(a) 9π (b) 4π (c) 36π (d) None of these

Q10. The area of the region bounded by the parabola $y^2 = 4ax$ and the lines $x = a$ and $x = 4a$, is

(a) $\frac{35a^2}{3}$ (b) $\frac{56a^2}{3}$ (c) $\frac{49a^2}{3}$ (d) $\frac{28a^2}{3}$

Q11. The area of the region bounded by the parabola $y^2 = 4x$, $y = 3$ and the y-axis is

(a) 2 (b) $6\sqrt{2}$ (c) $\frac{9}{4}$ (d) $3\sqrt{2}$

Q12. The area of the smaller region bounded by the circle $x^2 + y^2 = 9$ and the line $x = 1$ is

(a) $9\sec^{-1}3 - 2\sqrt{2}$ (b) $\frac{9}{2}\sec^{-1}3 - \sqrt{2}$ (c) $2\sqrt{2} - 9\sec^{-1}3$ (d) $2\sqrt{2}$

Q13. The area of the region bounded by the curves $y = x^2$ and $y = |x|$ is

(a) $\frac{1}{6}$ (b) $\frac{1}{3}$ (c) $\frac{5}{6}$ (d) $\frac{5}{3}$

*Question numbers **14** and **15** are Assertion and Reason based questions. Two statements are given, one labelled **Assertion (A)** and the other labelled **Reason (R)**. Select the correct answer from the codes (a), (b), (c) and (d) as given below.*

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true and Reason (R) is **not** the correct explanation of Assertion (A).
(c) Assertion (A) is true but Reason (R) is false.
(d) Assertion (A) is false but Reason (R) is true.

Q14. **Assertion (A) :** Area of a circle $x^2 + y^2 = 1$ in the first quadrant is π Sq.units.

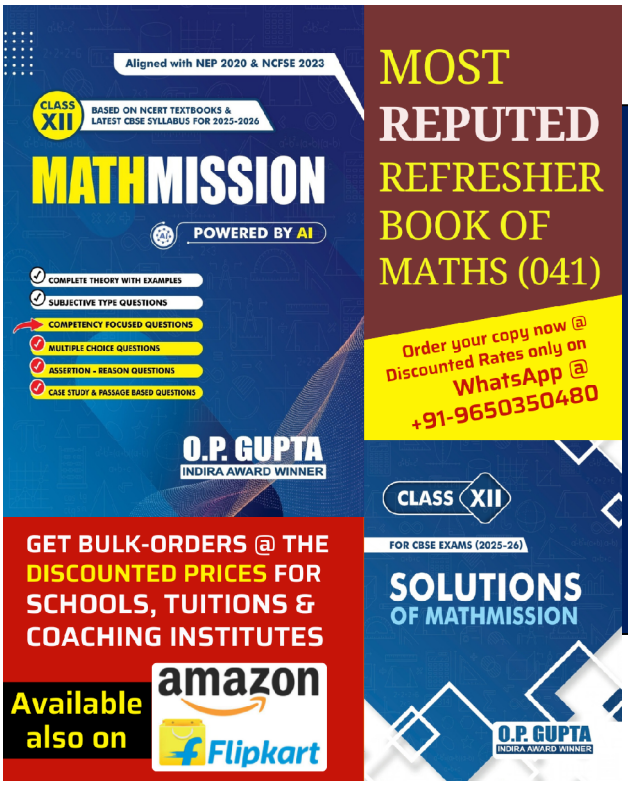
Reason (R) : For a circle $x^2 + y^2 = 1$, the area enclosed in the first quadrant can be obtained by the integral value $\int_0^1 \sqrt{1 - x^2}\, dx$.

(+919650350480)

Q15. **Assertion (A) :** Area enclosed by $y = \cos x$, $x = 0$ and $x = \pi$ is 2 Sq. units.

Reason (R) : Area enclosed by the curve $y = \cos x$, $x = 0$ and $x = \pi$ is given by the integral value $\int_0^{\pi} \cos x \, dx$.

Check LAST PAGE FOR THE QR-CODES to View the DETAILED SOLUTIONS of this Test.
SHARE THIS FILE with all other math scholars.
You may Add our mobile no. +919650350480 to your WhatsApp Groups for regular updates.
MS Word files of MCQ Tests / Subjective Tests / Case-Study Questions are available for SALE.



We have released Set of 2 Books for CBSE XII Maths (041) useful for session 2025-26.

1. MATHMISSION FOR XII
- ☑ COMPLETE THEORY & EXAMPLES
- ☑ SUBJECTIVE TYPE QUESTIONS
- ☑ COMPETENCY FOCUSED QUESTIONS
  - ✪ Multiple Choice Questions
  - ✪ Assertion-Reason Questions
  - ✪ Case-Study / Passage Based Questions
- ☑ H.O.T.S. Questions from recent exams.
- ☑ Answers of all the Questions of Exercises

2. SOLUTIONS OF MATHMISSION
- ☑ Step-by-step Detailed Solutions
  (For all the Exercises of MATHMISSION)

This document contains MCQs for Mathematics (041) of class XII.
✪ **Answers / Solutions** is available on YouTube channel - MATHEMATICIA By O.P. GUPTA
◈ You can **share this document** with other Students / Teachers.

With a lot of Blessings!

O.P. GUPTA
Author & Math Mentor
Indira Award Winner

The O.P. Gupta Advanced Math Classes
@ **Think Academy**, Near Dhansa Bus Stand
Metro Station Gate No.3, Najafgarh, Delhi

Telegram / WhatsApp : +919650350480

YouTube.com/@theopgupta

Exclusive coaching for Maths (041)
By O.P. GUPTA
- ☑ **CBSE XII**
- ☑ **CBSE XI**
- ☑ **CUET**
- ☑ **JEE - MAIN**
- ☑ **NDA**

MATHEMATICS

(Multiple Choice Questions)

Class 12 - CBSE (2025-26)

Scan QR-Codes for more MCQs & Video Solutions

(Alternatively, you can TOUCH THE QR-CODES)

Matrices

Determinants

Relations & Functions

Inverse Trig. Functions

Continuity & Diff.

Application of Derivatives

Indefinite Integrals

Definite Integrals

Application of Integrals

Differential Equations

Vector Algebra

3 D Geometry

Linear Programming

Probability

SCAN **QR-CODE** TO DOWNLOAD MORE **FREE PDF RESOURCES**

ⓘ SHARE THIS FILE with all other math scholars.

ⓘ You may Add our mobile no. +919650350480 to your WhatsApp Groups for regular updates.

ⓘ MS Word files of MCQ Tests / Subjective Tests / Case-Study Questions are available for SALE.

To buy MS Word files, please connect on WhatsApp @ +919650350480 via Message only.

ⓘ PDF Files are FREE for all the Students / Teachers.

theopgupta.com

MATHEMATICIA BY O.P. GUPTA

...a name you can bank upon!

Feel Safe to **Share this Document** with other math scholars

CLICK NOW

TO Download

or, just type - theopgupta.com

FREE PDF TESTS AND ASSIGNMENTS OF THE CLASSES XII, XI & X

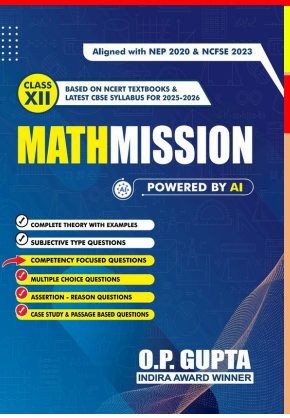
To get FREE PDF Materials, join WhatsApp Teachers Group by Clicking on the Logo

Click on the Book cover to buy!

If you are a **Student**, then you may join our **Students Group**

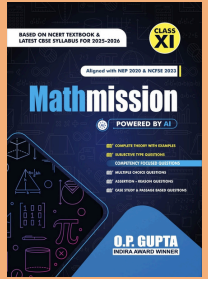
CLICK HERE FOR CLASSES IX & X

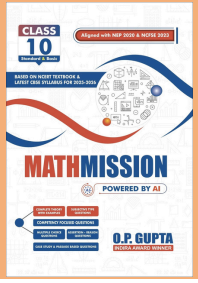
CLICK HERE FOR CLASSES XI & XII



You can add our WhatsApp no. +919650350480 to your Groups also

Many **Direct Questions from our Books** have been asked in the recent CBSE Exams





MATHMISSION FOR XII, XI & X

2025-26 Edition

/theopgupta /theopgupta /theopgupta /@theopgupta

Buy our books on amazon Flipkart

For Bulk Orders of our Books at Discounted Price, contact on +91-9650350480