



MULTIPLE CHOICE TYPE QUESTIONS

For 2025 Exams - Mathematics (041) - Class 11

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

01. $\sqrt{-4} \times \sqrt{-25} =$
(a) 10 (b) $-10i$ (c) $10i$ (d) -10
02. If $z = 3 - 2i$, then $\text{Re}(z) + \text{Im}(z) =$
(a) 5 (b) -1 (c) 1 (d) -5
03. If $z = \sqrt{-225}$, then $\text{Re}(z) =$
(a) 0 (b) 15 (c) -15 (d) $15i$
04. If $z_1 = 2 - i$ and $z_2 = 1 + 2i$, then $z_2 \cdot \bar{z}_1 =$
(a) $\frac{|z_1|}{2}$ (b) $|z_1|$ (c) $|z_1|^2$ (d) $2|z_1|$
05. The value of $(1+i)^4 - (1-i)^4$ is
(a) 4 (b) 0 (c) 8 (d) -4
06. If $z = 1 + i$, then $|z - 1 + i| =$
(a) ± 2 (b) -2 (c) 1 (d) 2
07. Let $n \in \text{Natural numbers}$. Then the value of $i^{4n} + i^{4n+1} + i^{4n+2} + i^{4n+3}$ is
(a) 1 (b) 0 (c) i (d) $-i$
08. The sum of series $i + i^2 + i^3 + \dots$ up to 1000 terms is
(a) 0 (b) i (c) $-i$ (d) None of these
09. If $z_1 = \sqrt{3} + i\sqrt{3}$, $z_2 = \sqrt{3} + i$, then the value of $\left| \frac{z_1}{z_2} \right|$ is
(a) $\sqrt{3}$ (b) $\frac{3}{2}$ (c) $\frac{\sqrt{3}}{2}$ (d) $\sqrt{\frac{3}{2}}$
10. For $z = \left(\frac{1-i}{1+i} \right)$, the additive inverse of z is
(a) $-i$ (b) $1-i$ (c) i (d) $-1+i$
11. If $z = \frac{1+\sqrt{3}i}{i}$, then $|z| =$
(a) 4 (b) -2 (c) 2 (d) ± 2
12. If $z = \frac{i}{1-i}$, then the conjugate of z equals
(a) $-\frac{1}{2} + \frac{i}{2}$ (b) $-\frac{1}{2} - \frac{i}{2}$ (c) $\frac{1}{2} - \frac{i}{2}$ (d) $\frac{1}{2} + \frac{i}{2}$
13. If $z = 1 + \sqrt{3}i$, then $\arg(z) =$
(a) $-\frac{\pi}{3}$ (b) $-\frac{2\pi}{3}$ (c) $\frac{\pi}{3}$ (d) $-\frac{5\pi}{6}$

14. The modulus of the multiplicative inverse of $z = -1 + i$ is given by
 (a) $\sqrt{2}$ (b) $\frac{1}{\sqrt{2}}$ (c) $\frac{1}{2}$ (d) 1
15. For $z = -1 - i$, $|2z|$ equals
 (a) $\pm 2\sqrt{2}$ (b) 8 (c) $-2\sqrt{2}$ (d) $2\sqrt{2}$
16. For a complex number z , the value of $(z+3)(\bar{z}+3)$ is equivalent to
 (a) $|z-3|$ (b) $|z+3|^2$ (c) $|z|^2 + 9$ (d) $|z+3|$
17. If $n \in \mathbb{Z}^+$ and $\left(\frac{1+i}{1-i}\right)^x = 1$, then
 (a) $x = 4n$ (b) $x = 4n + 1$ (c) $x = 2n$ (d) $x = 2n + 1$
18. A real value of x satisfies the equation $\left(\frac{3-4ix}{3+4ix}\right) = \alpha - i\beta$, ($\alpha, \beta \in \mathbb{R}$), if $\alpha^2 + \beta^2$ is equal to
 (a) -1 (b) 1 (c) 2 (d) -2
19. For $a + ib$, the modulus is given by
 (a) $a^2 + b^2$ (b) $\pm\sqrt{a^2 + b^2}$ (c) $\sqrt{a^2 + b^2}$ (d) $\pm(a^2 + b^2)$
20. If $z_1 = 1 - i$ and $z_2 = -1 + \sqrt{3}i$, then $\arg(z_1) + \arg(z_2)$ is
 (a) $\frac{\pi}{12}$ (b) $-\frac{\pi}{12}$ (c) $\frac{7\pi}{12}$ (d) $\frac{5\pi}{12}$
21. If $f(z) = 1 + z^2$, where $z = 1 + i$, then $|f(z)| =$
 (a) 5 (b) $\sqrt{2}$ (c) $2\sqrt{2}$ (d) $\sqrt{5}$
22. If $|z| = 4$ and $\arg(z) = \frac{\pi}{6}$, then $z =$
 (a) $-2\sqrt{3} + 2i$ (b) $2\sqrt{3} + 2i$ (c) $2 + i\sqrt{3}$ (d) $\sqrt{3} - 2i$
23. Multiplicative inverse of $3i$ is
 (a) $-\frac{i}{3}$ (b) $\frac{i}{3}$ (c) $1 + \frac{i}{3}$ (d) $1 - \frac{i}{3}$
24. $|(1-i)^3| =$
 (a) $\pm 2\sqrt{2}$ (b) 2 (c) $2\sqrt{2}$ (d) 4
25. $\frac{3+2i}{2-5i} + \frac{3-2i}{2+5i}$ is
 (a) purely real (b) purely imaginary
 (c) both, purely real and purely imaginary (d) neither purely real nor purely imaginary
26. If $x = -2 - i\sqrt{3}$, then $2x^4 + 5x^3 + 7x^2 - x + 41 =$
 (a) 6i (b) 0 (c) 6 (d) -6
27. If $z_1 = 1 - i$, $z_2 = -2 + 4i$, then $\operatorname{Im}\left(\frac{z_1 z_2}{z_1}\right)$ is
 (a) 2i (b) 2 (c) 4 (d) $4 + 2i$

Question numbers 28 to 30 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.

28. **Assertion (A) :** Number of non-zero integral solutions of the equation $|1-i|^x = 2^x$ is zero.

Reason (R) : For all $z = x + iy$, real and imaginary parts of z are respectively x and y .

29. **Assertion (A) :** If $(x + iy)(2 - 3i) = 4 + i$, then $13x + 13y = 19$.

Reason (R) : If $x + iy = u + iv$, then $x = u$ and $y = v$.

30. **Assertion (A) :** If $\frac{3 + 2i \sin \theta}{1 - 2i \sin \theta}$ is purely real, then $\theta = n\pi$, $n \in \mathbb{Z}$.

Reason (R) : If $\sqrt[3]{a + ib} = x + iy$, then $\frac{a}{x} + \frac{b}{y} = 4(x^2 - y^2)$.

CLASS XI BASED ON NCERT TEXTBOOK & LATEST CBSE SYLLABUS FOR 2024-25

Mathmission

UNLEASH THE POWER OF AI WITH QR CODES TO ACCESS MORE FREE RESOURCES

O.P. GUPTA
INDIRA AWARD WINNER

- ❖ COMPLETE THEORY WITH EXAMPLES
- ❖ SUBJECTIVE TYPE QUESTIONS
- ❖ COMPETENCY FOCUSED QUESTIONS
- ❖ MULTIPLE CHOICE QUESTIONS
- ❖ ASSERTION - REASON QUESTIONS
- ❖ CASE STUDY QUESTIONS
- ❖ PASSAGE - BASED QUESTIONS

GET BULK-ORDERS @ THE DISCOUNTED PRICES FOR SCHOOLS, TUITIONS & COACHING INSTITUTES

Buy now online

amazon **Flipkart**

with Keen Support of
THOUSANDS OF TEACHERS
ACROSS THE GLOBE

MOST REPUTED REFRESHER BOOK OF MATHS (041)

Order your copy now @
Discounted Rates only on
WhatsApp @ +91-9650350480

CLASS XI

FOR CBSE EXAMS (2024-25)

SOLUTIONS OF MATHMISSION

O.P. GUPTA
INDIRA AWARD WINNER

We have released Set of **2 Books** for CBSE Class XI (Academic session 2024-25).

1. MATHMISSION FOR XI

- ❑ COMPLETE THEORY & EXAMPLES
- ❑ SUBJECTIVE TYPE QUESTIONS
- ❑ COMPETENCY FOCUSED QUESTIONS
 - ❖ Multiple Choice Questions
 - ❖ Assertion-Reason Questions
 - ❖ Case-Study Questions
 - ❖ Passage-Based Questions
- ❑ ANSWERS OF ALL QUESTIONS

2. SOLUTIONS OF MATHMISSION

- ❑ Step-by-step Detailed Solutions
(For all Exercises of MATHMISSION)

This document contains MCQs for Mathematics (041) of class XI.

★ Answers / Solutions is available on YouTube channel – Mathematicia By O.P. Gupta

You can share this document with other students!

✍ 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

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!



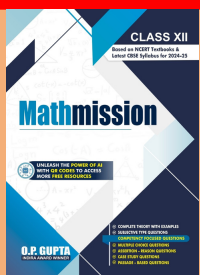
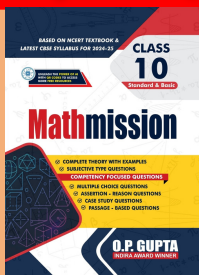
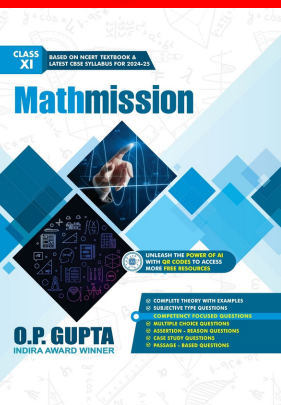
If you are a **Student**, then you may
join our **Students Group**

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**
2024-25 Edition

Buy our
books on
amazon
Flipkart

/theopgupta /theopgupta /theopgupta /@theopgupta

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