

# **APPSC FRO**

**Previous Year Paper  
(Mathematics)**

**26 Sept, 2023 Shift 1**



# ALL EXAMS, **ONE** SUBSCRIPTION



Test. Analyze. Improve. Repeat.



*Don't just  
prepare.  
**Perform.***

Test Prime – built only  
for mock tests.



**1,50,000+**  
Mock Tests



**25,000+**  
Previous Year  
Papers



**800+**  
Exam  
Covered



**500%**  
Refund on  
Selection



**5 lakh+**  
Free Quizzes



**Daily**  
Free PDFs



**Top Alerts**  
Stay Updated

## WHY TEST PRIME?

- ✓ Multilingual
- ✓ Detailed Solution
- ✓ Strong and Weak Areas
- ✓ All India Rankings



Safe & Reliable



Trusted by  
Lakhs of Aspirants



Your Success,  
Our Mission



**DOWNLOAD  
TEST PRIME**

Your Success Partner!



**Test**

**Prime**



# SUCCESS GALLERY!

## MEET THE ACHIEVERS



**Shreya, SBI PO**



**Sahil, SBI PO**



**Srijita, SBI PO**



**Vikram, IBPS PO**



**Neeti, IBPS PO**



**Arya, IBPS PO**



**Hasan, SSC CGL**



**Palak, SSC CGL**



**Priti, UP TGT**



**Aniket, Bihar Stet**



**Shaurya, NTPC**



**Sarita, CTET**



**Gourav, NTPC**



**Sanni, NTPC**



**Abhishek, CTET**



**Sapna, IBPS Clerk**

**THEY DID IT. YOU CAN TOO**

**READ THEIR STORIES!**



# APOnline Limited

**Notations :**

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

|                                  |                                                   |
|----------------------------------|---------------------------------------------------|
| Question Paper Name :            | Paper II Mathematics FRO 26th Sep 2023<br>Shift 1 |
| Subject Name :                   | Paper II Mathematics FRO                          |
| Actual Answer Key :              | Yes                                               |
| Calculator :                     | None                                              |
| Magnifying Glass Required? :     | No                                                |
| Ruler Required? :                | No                                                |
| Eraser Required? :               | No                                                |
| Scratch Pad Required? :          | No                                                |
| Rough Sketch/Notepad Required? : | No                                                |
| Protractor Required? :           | No                                                |
| Show Watermark on Console? :     | Yes                                               |
| Highlighter :                    | No                                                |
| Auto Save on Console?            | Yes                                               |
| Change Font Color :              | No                                                |
| Change Background Color :        | No                                                |
| Change Theme :                   | No                                                |
| Help Button :                    | No                                                |
| Show Reports :                   | No                                                |
| Show Progress Bar :              | No                                                |
| Is this Group for Examiner? :    | No                                                |
| Examiner permission :            | Cant View                                         |

Show Progress Bar? : No

Paper II Mathematics FRO

Section type : Online  
Section Negative Marks : 0.33  
Enable Mark as Answered Mark for Review and Clear Response : Yes  
Maximum Instruction Time : 0  
Is Section Default? : null

Question Number : 1 Question Id : 630680383653 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0.33

When a number  $n$  is divided by 3, it leaves the remainder 2. What will be the remainder when  $(3n + 5)$  is divided by 3?

Options :

- 1. ✖ -1
- 2. ✖ 0
- 3. ✔ 2
- 4. ✖ 4

Question Number : 2 Question Id : 630680383654 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0.33

Based on Euclid's division algorithm, considering the following assertion and reason statements, which of the options is correct?

**Assertion (A):**

The HCF of 81 and 675 using the Euclidean division algorithm is 27.

**Reason (R):**

$$675 = 81 \times 8 + 27$$

$$81 = 27 \times 3 + 0$$

**Options :**

1.  Both A and R are true, and R is the correct explanation of A.
2.  Both A and R are true, but R is not the correct explanation of A.
3.  A is true but R is false.
4.  Both A and R are false.

Question Number : 3 Question Id : 630680383655 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $5^p \times 2^8 = 10^8$ , then the value of  $p$  is:

**Options :**

1.  4
2.  8
3.  16

4. ✖ 32

Question Number : 4 Question Id : 630680383656 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

$9^{3.5} : 2^2 \times 3^5$  is the same as:

Options :

1. ✖ 3 : 2

2. ✖ 9 : 2

3. ✖ 3 : 4

4. ✔ 9 : 4

Question Number : 5 Question Id : 630680383657 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Which of the following is the largest?

Options :

1. ✖  $\sqrt{2}$

2. ✖  $\sqrt[3]{4}$

3. ✔  $\sqrt{3}$

4. ✖  $\sqrt[3]{2}$

Question Number : 6 Question Id : 630680383658 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

$$7\frac{3}{10} - 3\frac{1}{4} - 2\frac{3}{5} = ?$$

Options :

1. ✖ 1.68

2. ✔ 1.45

3. ✖ 1.52

4. ✖ 1.39

Question Number : 7 Question Id : 630680383659 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The value of  $\sqrt{14 + 2\sqrt{45}}$ :

Options :

1. ✔  $3 + \sqrt{5}$

2. ✖  $3 - \sqrt{5}$

3. ✖  $\sqrt{3} + \sqrt{5}$

4. ✖  $\sqrt{3} - \sqrt{5}$

Question Number : 8 Question Id : 630680383660 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $a = b^{-\frac{2}{3}}$  and  $b = c^{-3}$ , then the value of  $c$  in terms of  $a$  is:

Options :

1. ✔  $\sqrt{a}$

2. ✖  $\sqrt[3]{a}$

3. ✖  $a^2$

4. ✖  $a^3$

Question Number : 9 Question Id : 630680383661 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The increase in the price of an item was 25%. The price was then decreased by 20%, and again increased by 10%. The resultant increase in the price is:

Options :

1. ✖ 6%

2. ✖ 8%

3. ✓ 10%

4. ✗ 12%

Question Number : 10 Question Id : 630680383662 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

A train crosses a 110 m long platform in 12 seconds at a speed of 54 km/h. What is the length of the train (in m)?

Options :

1. ✗ 60

2. ✓ 70

3. ✗ 80

4. ✗ 90

Question Number : 11 Question Id : 630680383663 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

A and B together can do a piece of work in 3 days and A alone can do it in 5 days. B alone can do the same piece of work in:

Options :

1. ✓  $7\frac{1}{2}$  days

2. ✗  $2\frac{1}{7}$  days

3. ✖  $7\frac{1}{3}$  days

4. ✖  $5\frac{1}{2}$  days

**Question Number : 12 Question Id : 630680383664 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

In what time (in years) will the simple interest be  $\frac{2}{5}$  of the principal at 8% per annum?

**Options :**

1. ✖ 3

2. ✖ 3.5

3. ✔ 5

4. ✖ 5.5

**Question Number : 13 Question Id : 630680383665 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

In what time (in years) will ₹8,000 amount to ₹9,261 at 5% per annum, compounded annually?

**Options :**

1. ✔ 3

2. ✖  $3\frac{1}{2}$

3. ✖ 4

4. ✖  $4\frac{1}{2}$

Question Number : 14 Question Id : 630680383666 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $a : b = 4 : 3$ ,  $b : c = 7 : 5$  and  $c : d = 9 : 8$ , then  $a : d$  is equal to:

Options :

1. ✖ 3 : 7

2. ✖ 7 : 3

3. ✖ 10 : 21

4. ✔ 21 : 10

Question Number : 15 Question Id : 630680383667 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The incomes of A and B are in the ratio 3 : 2, and their expenditures are in the ratio 5 : 3. If each of them saves ₹1,000, then match column I with column II in the following table.

| Column I           | Column II |
|--------------------|-----------|
| P) A's income      | 1. ₹3,000 |
| Q) B's income      | 2. ₹6,000 |
| R) A's expenditure | 3. ₹4,000 |
| S) B's expenditure | 4. ₹5,000 |

Options :

1. ✖ P-1; Q-2; R-3; S-4
2. ✖ P-3; Q-2; R-1; S-4
3. ✔ P-2; Q-3; R-4; S-1
4. ✖ P-4; Q-3; R-2; S-1

Question Number : 16 Question Id : 630680383668 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0.33

If the numerator of a fraction is increased by 15% and the denominator is decreased by 7%, the value of the new fraction becomes  $\frac{5}{3}$ . The original fraction is:

Options :

1. ✖  $\frac{27}{23}$

2. ✖  $\frac{30}{23}$

3. ✖  $\frac{23}{31}$

4. ✔  $\frac{31}{23}$

Question Number : 17 Question Id : 630680383669 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $\beta^2$  is a zero of the polynomial  $\alpha(x)$ , then the divisor of  $\alpha(x)$  will be:

Options :

1. ✖  $(x - \beta)^2$

2. ✔  $x - \beta^2$

3. ✖  $(x - \beta)(x + \beta)$

4. ✖  $x + \beta^2$

Question Number : 18 Question Id : 630680383670 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

When a polynomial  $f(x) = abx^3 - bx + r$  is divided by  $g(x)$ , it leaves the quotient as  $bx$ , and remainder as  $r$ . The  
value of  $g(x)$  will be:

Options :

1. ✓  $ax^2 - 1$
2. ✗  $x^2 - 1$
3. ✗  $ax^2 + 1$
4. ✗  $-ax^2 + 1$

Question Number : 19 Question Id : 630680383671 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Which of the following statements is true?

Options :

1. ✗ For all integers  $n$ ,  $n^2 + n + 11$  is prime
2. ✗ The number of prime integers less than or equal to 101 is 91.
3. ✗ There exists a finite number of odd prime integers.
4. ✓ There exists a finite number of even prime integers.

Question Number : 20 Question Id : 630680383672 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

What number should be added to 231228 to make it exactly divisible by 11?

Options :

1. ✖ 1

2. ✖ 2

3. ✔ 3

4. ✖ 4

Question Number : 21 Question Id : 630680383673 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The least number of five digits that has 123 as a factor is:

Options :

1. ✖ 10063

2. ✖ 10081

3. ✔ 10086

4. ✖ 10037

Question Number : 22 Question Id : 630680383674 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The first five multiples of 12 are:

Options :

1. ✖ 1, 2, 3, 4, 6
2. ✖ 2, 4, 8, 6, 10
3. ✖ 24, 36, 48, 60, 72
4. ✔ 12, 24, 36, 48, 60

Question Number : 23 Question Id : 630680383675 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The exponent of 3 in the prime factorisation of 3750 is:

Options :

1. ✔ 1
2. ✖ 2
3. ✖ 3
4. ✖ 4

Question Number : 24 Question Id : 630680383676 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

How many positive factors of 200 are there?

Options :

1. ✖ 10

2. ✔ 12

3. ✖ 14

4. ✖ 16

Question Number : 25 Question Id : 630680383677 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The least number which when divided by 12, 15, 20 and 54 leaves in each case a remainder of 8 is:

Options :

1. ✖ 546

2. ✔ 548

3. ✖ 550

4. ✖ 552

Question Number : 26 Question Id : 630680383678 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The HCF and LCM of two numbers are 11 and 363, respectively. If one of the numbers lies between 111 and 129, then that number is:

Options :

1. ✖ 113

2. ✖ 117

3. ✖ 119

4. ✔ 121

Question Number : 27 Question Id : 630680383679 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The largest length (in cm) of the tape to be used to measure a room sides whose distances are 6 m 48 cm, 11 m 52 cm, and 16 m 20 cm, is:

Options :

1. ✖ 72

2. ✔ 36

3. ✖ 32

4. ✖ 45

Question Number : 28 Question Id : 630680383680 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $10^{\log_{10}(x^2 + 7x + 4)} = 2x - 2$ , the value of  $x$  is:

Options :

1. ✓ -2 and -3
2. ✗ -2 and 3
3. ✗ 2 and -3
4. ✗ 2 and 3

Question Number : 29 Question Id : 630680383681 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The value of  $[\log_{10}(50\log_{10} 100)]^3$  is:

Options :

1. ✗ 2
2. ✗ 4
3. ✓ 8
4. ✗ 16

Question Number : 30 Question Id : 630680383682 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $\log_{0.3}(x - 2) > \log_{0.09}(x - 2)$ , then the value of  $x$  will lie in the interval:

Options :

1. ✓  $(3, \infty)$

2. ✖  $(-3, -2)$

3. ✖  $(-3, 2)$

4. ✖  $(2, 3)$

Question Number : 31 Question Id : 630680383683 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $a + b = 7$ , then the value of  $(a - 2)^7 + (b - 5)^7$  is:

Options :

1. ✔ 0

2. ✖ 1

3. ✖  $2^7$

4. ✖  $5^7$

Question Number : 32 Question Id : 630680383684 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Meghavini donated ₹  $(x^2 + 13x + 42)$  for the education of

$(x + 6)$  children. The amount received by each child, if each of them received an equal amount, is:

Options :

1. ✖  $(x + 3)$

2. ✖  $(x + 5)$

3. ✔  $(x + 7)$

4. ✖  $(x + 11)$

Question Number : 33 Question Id : 630680383685 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The graph  $\frac{y}{5} = -1$  is a line:

Options :

1. ✖ parallel to x-axis at a distance of 5 units from the origin above the y-axis

2. ✖ makes an intercept  $-5$  on the x-axis

3. ✖ makes an intercept  $-1$  on the x-axis

4. ✔ parallel to x-axis at a distance of 5 units from the origin below the y-axis

Question Number : 34 Question Id : 630680383686 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The number of solutions of the equation  $x - 0y + 2 = 0$  is:

Options :

1. ✖ zero

2. ✖ one

3. ✖ three

4. ✔ infinite

**Question Number : 35 Question Id : 630680383687 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

Based on the linear equations in two variables, consider the following assertion and reason statements, and decide which of the options is correct.

**Assertion (A):**

The equation of degree one in two variables is called a linear equation.

**Reason (R):**

The graph of an equation of degree one in two variables is a circle.

**Options :**

1. ✖ Both A and R are true, and R is the correct explanation of A.

2. ✖ Both A and R are true, but R is not the correct explanation of A.

3. ✔ A is true but R is false

4. ✖ Both A and R are false

**Question Number : 36 Question Id : 630680383688 Is Question Mandatory : No Calculator :**

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Consider the linear equation  $2x + 3y - 8 = 0$ . Another linear equation in two variables such that the geometrical representation of the pair so formed, intersects the other, will be:

Options :

1. ✓  $3x + 2y + 4 = 0$
2. ✗  $4x + 6y - 8 = 0$
3. ✗  $2x + 3y - 8 = 0$
4. ✗  $8x + 12y - 24 = 0$

Question Number : 37 Question Id : 630680383689 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The linear equation  $3x - 9y = 13$  has:

Options :

1. ✗ a unique solution
2. ✗ two solutions
3. ✗ no solutions
4. ✓ infinitely many solutions

Question Number : 38 Question Id : 630680383690 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Consider three linear equations  $x - 3y + 6 = 0$ ,  $2x - 6y + 12 = 0$  and  $\frac{x}{3} - y + 2 = 0$ . The solutions of the second and third equations will:

Options :

1. ✖ change
2. ✔ remain the same
3. ✖ change in case of multiplication only
4. ✖ change in case of division only

Question Number : 39 Question Id : 630680383691 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The solution of the equations  $2x - 3y = 2$  and  $x + 3y = 4$  is:

Options :

1. ✔ 2 and  $\frac{2}{3}$
2. ✖ 2 and  $\frac{3}{2}$
3. ✖ 3 and  $\frac{2}{3}$
4. ✖ 2 and 3

Question Number : 40 Question Id : 630680383692 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Select the correct option based on the following statement.

Statement:

Consider the relation  $c_1/c_2 = d_1/d_2 = p_1/p_2$ , where  $c_1, c_2, d_1, d_2, p_1, p_2$  are real numbers.

Conclusion:

I. The lines representing the pair of linear equations  $c_1x + d_1y + p_1 = 0$  and  $c_2x + d_2y + p_2 = 0$  are coincident.

II. The pair of linear equations  $c_1x + d_1y + p_1 = 0$  and  $c_2x + d_2y + p_2 = 0$  has infinitely many solutions.

Options :

1. ✖ Only conclusion I is correct
2. ✖ Only conclusion II is correct
3. ✖ Both conclusions I and II are incorrect
4. ✔ Both conclusions I and II are correct

Question Number : 41 Question Id : 630680383693 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

For what value of  $p$ , do the system of equations  $px - 5y = 2$  and  $5x + 5y = 3$  represent two lines intersecting at a single point?

Options :

1. ✔  $p \in \mathbb{R} - \{-5\}$

2. ✖  $p \in \mathbb{R} - \{1\}$

3. ✖  $p \in \mathbb{R} - \{5\}$

4. ✖  $p = -5$

Question Number : 42 Question Id : 630680383694 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The values of  $x$  and  $y$  in the following pair of linear equations are, respectively, \_\_\_\_\_ and \_\_\_\_\_.

$$\frac{1}{2x} + \frac{1}{3y} = 1, \frac{1}{3x} + \frac{1}{2y} = \frac{5}{6}$$

Options :

1. ✔  $\frac{5}{8}; \frac{5}{3}$

2. ✖  $\frac{5}{3}; \frac{5}{8}$

3. ✖  $\frac{5}{8}; -\frac{5}{3}$

4. ✖  $-\frac{5}{3}; \frac{5}{8}$

Question Number : 43 Question Id : 630680383695 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The pair of equations  $y = \frac{11}{2}$  and  $y = -\frac{11}{2}$  has:

Options :

1. ☒ no solution
2. ☐ two solutions
3. ☐ one solution
4. ☐ infinitely many solutions

Question Number : 44 Question Id : 630680383696 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If the lines  $10x + ky = 2$  and  $2x + 3y = -1$  are parallel, then the value of  $k$  is:

Options :

1. ☐ 13
2. ☒ 15
3. ☐ 10
4. ☐ 5

Question Number : 45 Question Id : 630680383697 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The equations  $3x - ry + 7 = 0$  and  $6x - 10y + 15 = 0$  have no solution for:

Options :

1. ✖  $r = -3$

2. ✖  $r = -5$

3. ✖  $r = 3$

4. ✔  $r = 5$

Question Number : 46 Question Id : 630680383698 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $\left(x + \frac{1}{x}\right)^2 = 3$ , then the value of  $(x^{90} + x^{72} + x^{66} + x^{54} + x^{36} + x^{24} + x^6 - 3)$  is:

Options :

1. ✔  $-4$

2. ✖  $-3$

3. ✖  $-2$

4. ✖  $-1$

Question Number : 47 Question Id : 630680383699 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

**Correct Marks : 1 Wrong Marks : 0.33**

If  $p$  is subtracted from the polynomial  $(x^2 - 15x + 59)$  so that  $(x - 21)$  is the factor of the resulting polynomial, then the value of  $p$  is:

**Options :**

1. ✖ 150

2. ✖ 165

3. ✔ 185

4. ✖ 205

**Question Number : 48 Question Id : 630680383700 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

The bi-quadratic polynomial from among the following is:

**Options :**

1. ✖  $x^3 - x + 9$

2. ✔  $(x^2 - 15x + 59)(x^2 - 9)$

3. ✖  $x^6 - x^2 + 3$

4. ✖  $x^8 - 5x + 5$

**Question Number : 49 Question Id : 630680383701 Is Question Mandatory : No Calculator :**

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If two roots of the cubic polynomial  $x^3 - 2x^2 - 13x - 10$  are  $-2$  and  $-1$ , then the third root is:

Options :

1. ✖  $-3$

2. ✖  $-2$

3. ✖  $-5$

4. ✔  $5$

Question Number : 50 Question Id : 630680383702 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Match column I with column II in the following table:

| Column I                                                  | Column II                      |
|-----------------------------------------------------------|--------------------------------|
| A. Polynomial with one degree                             | P. Not polynomial              |
| B. $\sqrt{2x} - 1$                                        | Q. Cubic polynomial            |
| C. $\sqrt{11\pi}$                                         | R. Linear polynomial           |
| D. A polynomial $f(x)$ cuts the $x$ -axis at three points | S. Polynomial with degree zero |

Options :

1. ✖ A-S; B-Q; C-P; D-R

2. ✔ A-R; B-P; C-S; D-Q

3. ✖ A-S; B-P; C-Q; D-R

4. ✖ A-R; B-Q; C-P; D-S

**Question Number : 51 Question Id : 630680383703 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

If  $p$  and  $q$  are the roots of the quadratic equation  $x^2 - 5x + 7 = 0$ , then the quadratic equation whose roots are  $p^2 - 5p + 13$  and  $q^2 - 5q + 7$ , is:

**Options :**

1. ✖  $x^2 + 6x = 0$

2. ✔  $x^2 - 6x = 0$

3. ✖  $x^2 - 4x = 0$

4. ✖  $x^2 + 4x = 0$

**Question Number : 52 Question Id : 630680383704 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

Given that one of the zeros of the cubic polynomial  $ax^3 + bx^2 + cx + d = 0$  is zero, the sum of the reciprocals of the other two roots is:

Options :

1. ✓  $-\frac{b}{c}$

2. ✗ 0

3. ✗  $\frac{b}{c}$

4. ✗  $-\frac{b}{a}$

Question Number : 53 Question Id : 630680383705 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Which term of the series 72, 63, 54, ..... is zero?

Options :

1. ✗ 7<sup>th</sup>

2. ✗ 8<sup>th</sup>

3. ✓ 9<sup>th</sup>

4. ✗ 11<sup>th</sup>

Question Number : 54 Question Id : 630680383706 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If 7 times the seventh term of an Arithmetic Progression (AP) is equal to 11 times its eleventh term, then the 18<sup>th</sup> term of the AP will be:

Options :

1. ✖ -1

2. ✔ 0

3. ✖ 1

4. ✖ 2

Question Number : 55 Question Id : 630680383707 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The n<sup>th</sup> term of an Arithmetic Progression (AP) 6, 2, -2, -6, -10, ... is:

Options :

1. ✖  $4n - 10$

2. ✔  $10 - 4n$

3. ✖  $10 + 4n$

4. ✖  $4n + 10$

Question Number : 56 Question Id : 630680383708 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The first odd number is 1, the 2<sup>nd</sup> odd number is 3, the 3<sup>rd</sup> odd number is 5 and so on. The 201<sup>st</sup> odd number is:

Options :

1. ✖ 201

2. ✖ 301

3. ✔ 401

4. ✖ 501

Question Number : 57 Question Id : 630680383709 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The values of  $k$  for which the quadratic equation  $(3k + 1)x^2 + 2(k + 1)x + 1 = 0$  has equal roots, are:

Options :

1. ✔ 0, 1

2. ✖ 0, 2

3. ✖ 0, -1

4. ✖ 1, -2

Question Number : 58 Question Id : 630680383710 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The roots of the quadratic equation  $(b - c)x^2 + (c - a)x + (a - b) = 0$ , where  $a + c \neq 2b$  are:

Options :

1. ✖ real and equal
2. ✔ real and unequal
3. ✖ complex and equal
4. ✖ complex and unequal

Question Number : 59 Question Id : 630680383711 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The ratio of the sum to the product of the roots of the quadratic equation  $(k + 1)x^2 - k^2x - k^3 = 0$  is:

Options :

1. ✖  $\frac{1}{k}$
2. ✖  $-\frac{1}{k^2}$
3. ✔  $-\frac{1}{k}$
4. ✖  $\frac{1}{k^3}$

Question Number : 60 Question Id : 630680383712 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The roots of the quadratic equation  $2x^2 + 2\sqrt{2}x + 1 = 0$  are:

Options :

1. ✖  $\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}$

2. ✖  $-\sqrt{2}, -\sqrt{2}$

3. ✔  $-\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}}$

4. ✖  $\frac{1}{\sqrt{2}}, \sqrt{2}$

Question Number : 61 Question Id : 630680383713 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Which of the following is NOT a quadratic equation?

Options :

1. ✖  $x^2 - 36 = 0$

2. ✖  $2x^2 + 4x - 5 = 0$

3. ✖  $5 + x + x^2 = 0$

4. ✓  $3 + x + x^3 = 0$

Question Number : 62 Question Id : 630680383714 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Two chords AB and AC of a circle subtend angles equal to  $80^\circ$  and  $140^\circ$ , respectively, at the centre. If AB and AC lie on the opposite sides of the centre, then the value of  $\angle BAC$  is:

Options :

1. ✗  $40^\circ$

2. ✓  $70^\circ$

3. ✗  $140^\circ$

4. ✗  $280^\circ$

Question Number : 63 Question Id : 630680383715 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The common tangent of the two touching circles  $2x^2 + 2y^2 + 6x - 2y - 7 = 0$  and  $2x^2 + 2y^2 - 4x + 7y + 9 = 0$  is:

Options :

1. ✓  $10x - 9y - 16 = 0$

2. ✗  $10x + 9y + 16 = 0$

3. ✗  $10x - 9y + 16 = 0$

4. ✖  $10x + 9y - 16 = 0$

Question Number : 64 Question Id : 630680383716 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Based on a circle, consider the following assertion and reason statements. Which of the options is correct?

Assertion (A):

Through three collinear points a circle can be drawn.

Reason (R):

A circle can pass through only two collinear points as well as through three collinear points.

Options :

1. ✖ Both A and R are true, but R is not the correct explanation of A.
2. ✖ Both A and R are true, and R is the correct explanation of A.
3. ✖ A is true but R is false.
4. ✔ Both A and R are false.

Question Number : 65 Question Id : 630680383717 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The angles of a cyclic quadrilateral ABCD are,  $A = (6x + 10)^\circ$ ,  $B = (5x)^\circ$ ,  $C = (x + y)^\circ$ , and  $D = (3y - 10)^\circ$ . The values of x and y are:

Options :

1. ✖  $x = 20^\circ$  and  $y = 10^\circ$
2. ✔  $x = 20^\circ$  and  $y = 30^\circ$
3. ✖  $x = 44^\circ$  and  $y = 15^\circ$
4. ✖  $x = 15^\circ$  and  $y = 15^\circ$

**Question Number : 66 Question Id : 630680383718 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

Let S be a circle with centre O in which chord PQ = chord RS = 7 cm. Based on this information, select the correct option.

**Options :**

1. ✔  $\angle POQ = \angle ROS$
2. ✖  $\angle POQ < \angle ROS$
3. ✖  $\angle POQ$  and  $\angle ROS$  are not related
4. ✖  $\angle POQ > \angle ROS$

**Question Number : 67 Question Id : 630680383719 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

let AB and CD be two chords in circle with centre O such that the distances of the chords AB and CD from O are 6 cm.  
If  $|CD| = 6$  cm, then the length of AB is:

Options :

1. ✖ 3 cm

2. ✔ 6 cm

3. ✖ 9 cm

4. ✖ 12 cm

Question Number : 68 Question Id : 630680383720 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If a point is in the 4<sup>th</sup> quadrant, then it is of the form:

Options :

1. ✔  $(+, -)$

2. ✖  $(-, +)$

3. ✖  $(-, -)$

4. ✖  $(+, +)$

Question Number : 69 Question Id : 630680383721 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Coordinate geometry studies:

Options :

1. ✖ the counting of numbers
2. ✖ how to find the cube root of a number
3. ✔ how to locate a point in a plane precisely
4. ✖ the creation of shapes

Question Number : 70 Question Id : 630680383722 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The perpendicular distance between the straight lines  $6x + 8y + 24 = 0$  and  $3x + 4y + 14 = 0$  is:

Options :

1. ✖ 1 units
2. ✔  $\frac{2}{5}$  units
3. ✖  $\frac{3}{5}$  units
4. ✖  $\frac{5}{2}$  units

Question Number : 71 Question Id : 630680383723 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The distance of the point  $(p - q, p + q)$  from the origin is:

Options :

1. ✖  $\sqrt{2}(p + q)$
2. ✖  $|p - q| + |p + q|$
3. ✖  $2\sqrt{p^2 + q^2}$
4. ✔  $\sqrt{2}\sqrt{p^2 + q^2}$

Question Number : 72 Question Id : 630680383724 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $(-4, \frac{4m}{5})$  is the mid-point of the segment joining the points  $(-6, 5)$  and  $B(-2, 3)$ , then the value of  $m$  is:

Options :

1. ✖  $-4$
2. ✖  $4$
3. ✔  $5$
4. ✖  $-5$

Question Number : 73 Question Id : 630680383725 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The pair of equations  $\frac{x}{3} = -2$  and  $\frac{y}{5} = -2$  graphically represents lines which are intersecting at

Options :

1. ✖  $(-2, -2)$
2. ✖  $(2, 2)$
3. ✖  $(6, 10)$
4. ✔  $(-6, -10)$

Question Number : 74 Question Id : 630680383726 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Based on the intersecting lines, consider the following assertion and reason statements. Then which of the options is correct?

Assertion (A): The straight lines  $7x - 4y = 10$  and  $3x - 4y = -2$  are intersecting lines.

Reason (R): The angle  $\alpha$  between the straight lines  $7x - 4y = 10$  and  $3x - 4y = -2$  satisfies  $\tan(\alpha) = \frac{16}{37}$ .

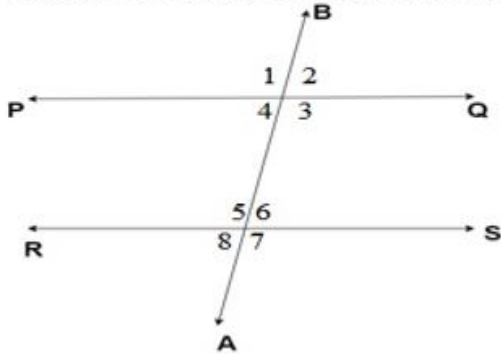
Options :

1. ✖ Both A and R are true, but R is not the correct explanation of A.
2. ✔ Both A and R are true, and R is the correct explanation of A.
3. ✖ A is true but R is false
4. ✖ Both A and R are false

Question Number : 75 Question Id : 630680383727 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

From the diagram given below, if a transversal intersects two parallel lines, then what is the relation between pair of alternate interior angles  $\angle 3$  and  $\angle 6$ ?



Options :

1. ✖  $\angle 3 + \angle 6 = 90^\circ$

2. ✖  $\angle 3 = \angle 6$

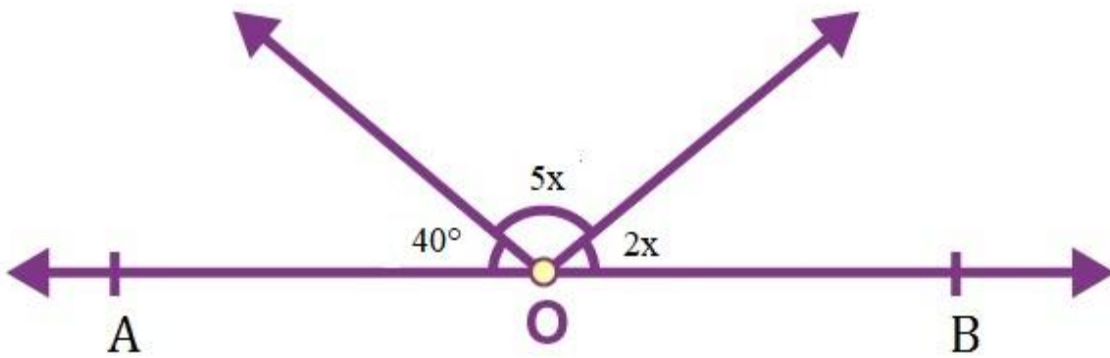
3. ✔  $\angle 3 + \angle 6 = 180^\circ$

4. ✖  $\angle 3 > \angle 6$

Question Number : 76 Question Id : 630680383728 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The value of  $x$  from the given figure, where AOB is a line, is



Options :

1. ✖  $15^\circ$
2. ✔  $20^\circ$
3. ✖  $25^\circ$
4. ✖  $35^\circ$

Question Number : 77 Question Id : 630680383729 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If two interior angles on the same side of a transversal intersecting two parallel lines are in the ratio 4 : 5, then the greater of the two angles is:

Options :

1. ✖  $55^\circ$
2. ✔  $100^\circ$
3. ✖  $125^\circ$

4. ✖  $154^\circ$

Question Number : 78 Question Id : 630680383730 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

In a parallelogram PQRS, the angles R and S are in the ratio 4 : 5 . The angle R is how much?

Note: For this question, discrepancy is found in question/answer. So, this question is ignored for all candidates.

Options :

1.  $40^\circ$
2.  $60^\circ$
3.  $100^\circ$
4.  $90^\circ$

Question Number : 79 Question Id : 630680383731 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

In the given  $\triangle ABC$ , Z is the mid-point of the median AD. If the area of  $\triangle ABC$  is  $18 \text{ m}^2$ , find the area of  $\triangle BZC$ .

Options :

1. ✖  $6 \text{ m}^2$

2. ✖  $8 \text{ m}^2$

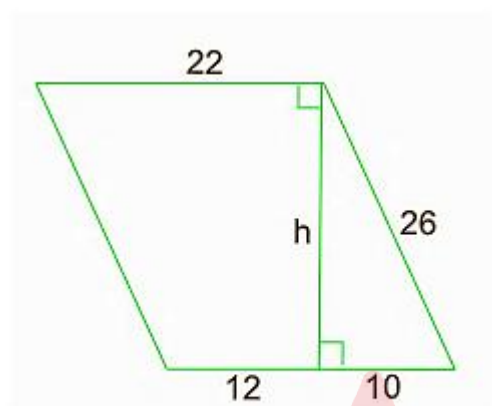
3. ✔  $9 \text{ m}^2$

4. ✖  $18 \text{ m}^2$

Question Number : 80 Question Id : 630680383732 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33



The area of the given parallelogram is:

Options :

1. ✖ 484 units

2. ✔  $528 \text{ units}^2$

3. ✖  $572 \text{ units}^2$

4. ✖  $576 \text{ units}^2$

**Question Number : 81 Question Id : 630680383733 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

Select the option that is true regarding the following two statements labelled Assertion and Reason.

**Assertion:** If the diagonals of a parallelogram ABCD are equal, then  $\angle ABC = 90^\circ$ .

**Reason:** If the diagonals of a parallelogram are equal, it becomes a rectangle.

**Options :**

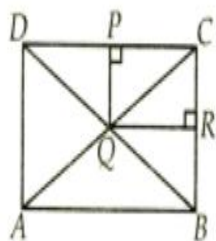
1. ✓ Assertion and reason are true, and reason is the correct explanation of assertion.
2. ✗ Both assertion and reason are true, but reason is not the correct explanation of assertion.
3. ✗ Assertion is true, but reason is false.
4. ✗ Assertion is false, but reason is true.

**Question Number : 82 Question Id : 630680383734 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

Select the option that is true regarding the following two statements labelled Assertion and Reason.

**Assertion:** If ABCD and PQRC are rectangles, and Q is the midpoint of AC, then  $CR = RB$ .



**Reason:** The line segment joining the midpoint of any two sides of a triangle is parallel to the third side and equal to half of it.

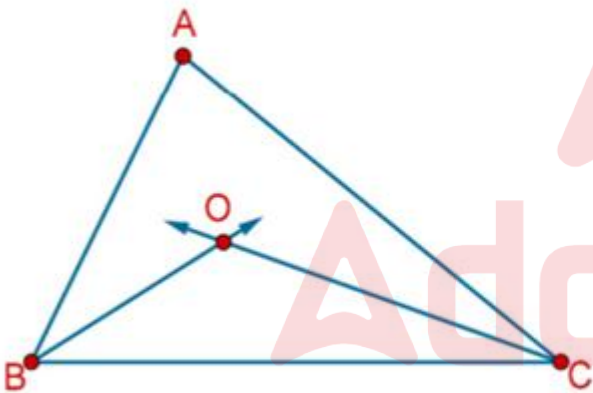
**Options :**

1. ✖ Assertion and reason are true, and reason is the correct explanation of assertion.
2. ✔ Both assertion and reason are true, but reason is not the correct explanation of assertion.
3. ✖ Assertion is true, but reason is false.
4. ✖ Assertion is false, but reason is true.

Question Number : 83 Question Id : 630680383735 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

In the given figure, the bisectors of  $\angle ABC$  and  $\angle BCA$  meet at point O.



If  $\angle BOC = 100$ , then  $\angle A$  equals \_\_\_\_\_ degrees.

Options :

1. ✖  $10^\circ$
2. ✖  $15^\circ$
3. ✔  $20^\circ$
4. ✖  $25^\circ$

Question Number : 84 Question Id : 630680383736 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Observe the given figure and answer the question that follows.



If  $AB \parallel CD$  and  $\angle BEF = 3P + 30^\circ$ ,  $\angle EFD = 2P + 20^\circ$ , then the value of P is:

Options :

1. ✖  $10^\circ$

2. ✖  $16^\circ$

3. ✖  $18^\circ$

4. ✔  $26^\circ$

Question Number : 85 Question Id : 630680383737 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The sides of similar triangles  $\triangle PQR$  and  $\triangle DEF$  are in the ratio 3 : 7. If the area of  $\triangle PQR$  is 63 sq. cm, then the area of  $\triangle DEF$  is:

Options :

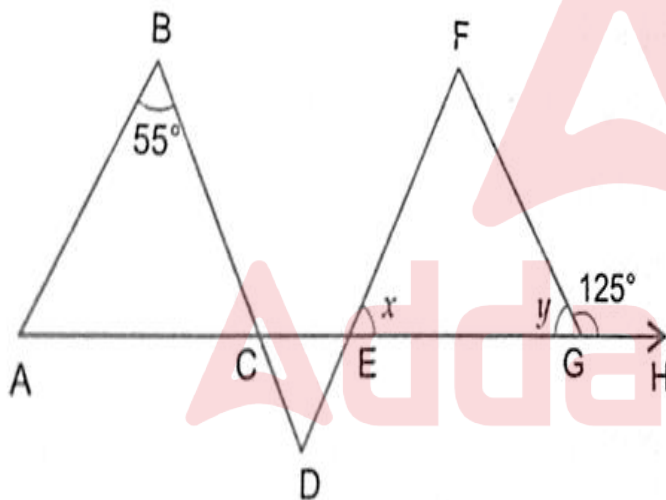
1. ✖ 434 sq. cm

2. ✔ 343 sq. cm

3. ✖ 334 sq. cm

4. ✖ 243 sq. cm

Question Number : 86 Question Id : 630680383738 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0.33



If  $AB \parallel DE$  and  $BD \parallel FG$  such that  $\angle FGH = 125^\circ$  and  $\angle B = 55^\circ$ , then what are the values of  $x$  and  $y$ ?

Options :

1. ✔  $x = 70^\circ$  and  $y = 55^\circ$

2. ✖  $x = 75^\circ$  and  $y = 50^\circ$

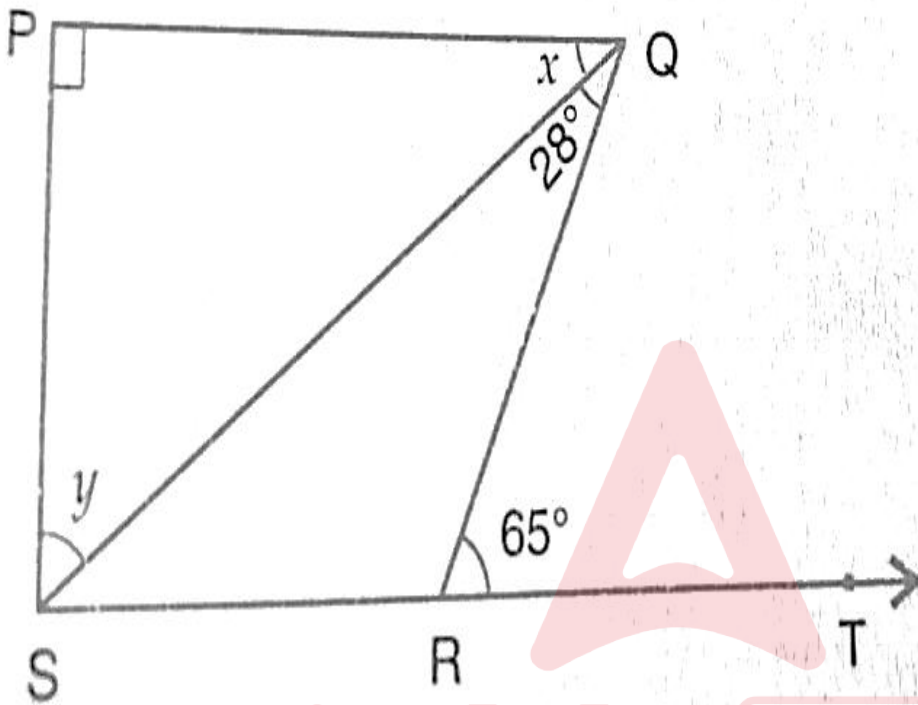
3. ✖  $x = 80^\circ$  and  $y = 45^\circ$

4. ✖  $x = 70^\circ$  and  $y = 50^\circ$

Question Number : 87 Question Id : 630680383739 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33



If  $PQ \perp PS$  and  $PQ \parallel SR$  such that  $\angle SQR = 28^\circ$  and  $\angle QRT = 65^\circ$ , then what are the values of  $x$  and  $y$ ?

Options :

1. ✖  $x = 53^\circ$  and  $y = 37^\circ$

2. ✖  $x = 60^\circ$  and  $y = 30^\circ$

3. ✖  $x = 30^\circ$  and  $y = 60^\circ$

4. ✔  $x = 37^\circ$  and  $y = 53^\circ$

Question Number : 88 Question Id : 630680383740 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

In triangle XYZ, XY is the shortest side and  $30^\circ$  is the measure of angle Y. Find the range of possible measures for angle X.

Options :

1. ✖  $110^\circ < X < 150^\circ$
2. ✔  $120^\circ < X < 150^\circ$
3. ✖  $0^\circ < X < 30^\circ$
4. ✖  $30^\circ < X < 60^\circ$

Question Number : 89 Question Id : 630680383741 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

$\triangle ABC$  and  $\triangle BDE$  are two equilateral triangles such that D is the mid-point of BC. If the areas of  $\triangle BDE$  is 14 sq. m, then the area of  $\triangle ABC$  is:

Options :

1. ✖ 32 sq. m
2. ✖ 42 sq. m
3. ✖ 52 sq. m
4. ✔ 56 sq. m

Question Number : 90 Question Id : 630680383742 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Which of the following sets of numbers is forming Pythagorean triplets?

- i. 36, 27, 45
- ii. 13, 12, 5
- iii.  $\sqrt{6}$ , 7, 1

Options :

- 1. ✖ Only ii
- 2. ✔ Only i and ii
- 3. ✖ Only i and iii
- 4. ✖ i, ii and iii

Question Number : 91 Question Id : 630680383743 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

In  $\triangle ABC$ , if the median  $AD = \frac{1}{2}BC$ , then  $\angle BAC$  is:

Options :

- 1. ✔  $90^\circ$
- 2. ✖  $60^\circ$

3. ✖  $45^\circ$

4. ✖  $75^\circ$

**Question Number : 92 Question Id : 630680383744 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

Find the area of a triangle two sides of which are 15 cm and 12 cm and whose perimeter is 40 cm.

**Options :**

1. ✖  $10\sqrt{7} \text{ cm}^2$

2. ✖  $10\sqrt{14} \text{ cm}^2$

3. ✖  $20\sqrt{7} \text{ cm}^2$

4. ✔  $20\sqrt{14} \text{ cm}^2$

**Question Number : 93 Question Id : 630680383745 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

Let's say the sides of a triangle are given as  $5x$ ,  $6x$  and  $7x$ . Find the expression for the area of the triangle.

**Options :**

1. ✖  $8x^2$

2. ✖  $\sqrt{3}x^2$

3. ✓  $6\sqrt{6}x^2$

4. ✗  $8\sqrt{3}x^2$

Question Number : 94 Question Id : 630680383746 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Find the area of a circle if the area of its sector is 132 sq. cm and the angle subtended at the centre of the circle is  $80^\circ$ .

Options :

1. ✗ 424 sq. cm

2. ✗ 494 sq. cm

3. ✓ 594 sq. cm

4. ✗ 694 sq. cm

Question Number : 95 Question Id : 630680383747 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Calculate the arc length when  $r = 6$  cm and  $\theta = 60^\circ$ .

Options :

1. ✓  $\frac{44}{7}$

2. ✗

$$\frac{55}{7}$$

3. ✖  $\frac{66}{7}$

4. ✖  $\frac{88}{7}$

Question Number : 96 Question Id : 630680383748 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Select the option that is true regarding the following two statements labelled Assertion and Reason.

**Assertion:** Area of the square inscribed in a circle of radius  $r$  is  $2r^2$  sq.

**Reason:** Area of the major segment of a circle = Area of the circle – Area of the minor segment

Options :

1. ✖ Both Assertion and Reason are true, and Reason is the correct explanation of Assertion.
2. ✔ Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
3. ✖ Assertion is true, but Reason is false.
4. ✖ Assertion is false, but Reason is true.

Question Number : 97 Question Id : 630680383749 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Select the option that is true regarding the following two statements labelled Assertion and Reason.

**Assertion:** If a wire of length 44 cm is bent in the shape of a circle, then the area of the circle so formed is  $140 \text{ cm}^2$ .

**Reason:** Circumference of the circle = Length of the wire

**Options :**

1. ✖ Both Assertion and Reason are true, and Reason is the correct explanation of Assertion.
2. ✖ Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
3. ✖ Assertion is true, but Reason is false.
4. ✔ Assertion is false, but Reason is true.

**Question Number : 98 Question Id : 630680383750 Is Question Mandatory : No Calculator :**

**None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

The angle between any two sides of a parallelogram is 90 degrees. If the lengths of the two adjacent sides are 5 cm and 4 cm, respectively, then find the area.

**Options :**

1. ✖ 10 sq. cm
2. ✖ 15 sq. cm
3. ✔ 20 sq. cm
4. ✖ 25 sq. cm

Question Number : 99 Question Id : 630680383751 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The base of a parallelogram is four times its height. If its area is  $784 \text{ cm}^2$ , find the base and height.

Options :

1. ✖ 58 cm
2. ✔ 56 cm
3. ✖ 36 cm
4. ✖ 22 cm

Question Number : 100 Question Id : 630680383752 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Select the option that is true regarding the following two statements labelled Assertion and Reason.

**Assertion:** Area of a rhombus whose side is 10 cm and one diagonal is 12 cm is  $96 \text{ cm}^2$ .

**Reason:** All sides of the rhombus are equal.

Options :

1. ✔ Both Assertion and Reason are true, and Reason is the correct explanation of Assertion.
2. ✖ Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.
3. ✖ Assertion is true, but Reason is false.
4. ✖ Assertion is false, but Reason is true.

**Question Number : 101 Question Id : 630680383753 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

Consider a right-angled triangle. The areas of three squares drawn on each of its sides are 25 sq. m, 144 sq. m and 169 sq. m, respectively. What is the area of the triangle?

**Options :**

1. ✖ 24 sq. m
2. ✔ 30 sq. m
3. ✖ 32.5 sq. m
4. ✖ 78 sq. m

**Question Number : 102 Question Id : 630680383754 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

State whether the following statements are True and False.

- I. All equilateral triangles are similar.
- II. All isosceles triangles are similar.
- III. If two sides and the perimeter of one triangle are, respectively, three times the corresponding sides and the perimeter of the other triangle, then the two triangles are similar.
- IV. If the sides of two similar triangles are in the ratio 6 : 13, the areas of these triangles are in the ratio 169 : 36.

**Options :**

1. ✖

- I. False
- II. False
- III. True
- IV. False

- I. True
- II. False
- III. True
- 2. ✓ IV. False

- I. True
- II. True
- III. True
- 3. ✗ IV. False

- I. True
- II. False
- III. True
- 4. ✗ IV. True

Question Number : 103 Question Id : 630680383755 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0.33

The ratio of the areas of two similar triangles is equal to:

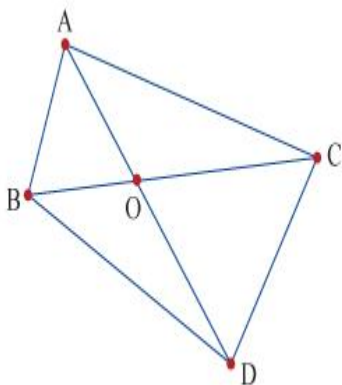
- the ratio of the square of any two corresponding sides
- the ratio of the squares of the corresponding altitudes
- the ratio of the squares of the corresponding medians
- the inverse ratio of the corresponding angle bisector segments

Options :

- ✗ i-True, ii-True, iii-True, iv-True
- ✗ i-True, ii-False, iii-True, iv-True
- ✗ i-True, ii-True, iii-False, iv-True
- ✓ i-True, ii-True, iii-True, iv-False

Question Number : 104 Question Id : 630680383756 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0.33

In the figure below,  $\triangle ABC$  and  $\triangle DBC$  are two triangles drawn on the same base  $BC$ .  $AD$  intersects  $BC$  at  $O$ .



The ratio  $\text{ar}(\triangle ABC) : \text{ar}(\triangle DBC)$  is equal to which of the following?

Options :

1. ✖ BO : CO
2. ✖  $BO^2 : CO^2$
3. ✔ AO : DO
4. ✖  $AO^2 : DO^2$

**Question Number : 105 Question Id : 630680383757 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

The ratio of the area of an equilateral triangle described on the side of a square to the area of the equilateral triangle described on its diagonal is:

**Options :**

1. ✖ 1 : 1
2. ✔ 1 : 2
3. ✖ 2 : 1
4. ✖ 2 : 3



**Question Number : 106 Question Id : 630680383758 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

If the radius of two circles are in the ratio 3 : 7, then their perimeter are in the ratio:

**Options :**

1. ✖ 9 : 49
2. ✔ 3 : 7

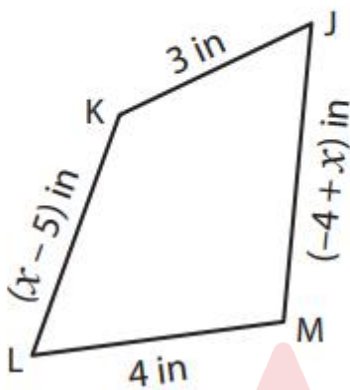
3. ✖ 49 : 9

4. ✖ 7 : 3

Question Number : 107 Question Id : 630680383759 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If the perimeter of the given quadrilateral is 16 inches, then the value of  $x$  is:



Options :

1. ✖ 7 inches

2. ✖ 8 inches

3. ✔ 9 inches

4. ✖ 10 inches

Question Number : 108 Question Id : 630680383760 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The height of a cone whose radius is 7 inches and curved surface area is  $550 \text{ in}^2$  is:

Options :

1. ✖ 25 inches

2. ✔ 24 inches

3. ✖ 23 inches

4. ✖ 22 inches

Question Number : 109 Question Id : 630680383761 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

What is the ratio of the curved surface area of a cylinder and a cone having the same radius?

Options :

1. ✔  $2h : l$

2. ✖  $2 : l$

3. ✖  $h : 3l$

4. ✖  $h : l + h$

Question Number : 110 Question Id : 630680383762 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If a cylinder's radius and height are in the ratio of 7 : 5, respectively, and their sum is 72 inches, then the total surface area of the cylinder is:

Options :

1. ✖ 7920 sq. inches
2. ✖ 15,840 sq. inches
3. ✔ 19,008 sq. inches
4. ✖ 55,440 sq. inches

Question Number : 111 Question Id : 630680383763 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The space diagonal of an ice cube is 20 units. After 10 minutes, it reduced 25%. Find its reduced lateral area.

Options :

1. ✖ 100 sq. units
2. ✖ 200 sq. units
3. ✖ 240 sq. units
4. ✔ 300 sq. units

Question Number : 112 Question Id : 630680383764 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Ajay wants to paint 4 identical doors of cuboidal shape with dimensions 0.6 m, 2 m and 5 cm. 1 litre of paint will cover  $2 \text{ m}^2$ . How much paint is required to paint all the 4 doors?

Options :

1. ✖ 4.2 litres
2. ✖ 4.32 litres
3. ✖ 5 litres
4. ✔ 5.32 litres

Question Number : 113 Question Id : 630680383765 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The radius of a cylinder has been halved, and the height has been tripled. Find the ratio of the new lateral surface area to the old lateral surface area of the cylinder.

Options :

1. ✖ 1 : 1
2. ✖ 1 : 2
3. ✖ 2 : 1
4. ✔ 3 : 2

Question Number : 114 Question Id : 630680383766 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Match the following.

|                                     |                    |
|-------------------------------------|--------------------|
| a. Lateral Surface Area of Cylinder | 1. $2\pi r(r + h)$ |
| b. Total Surface Area of Cylinder   | 2. $\pi r^2 h$     |
| c. Volume of Cylinder               | 3. $2\pi rh$       |

Options :

1. ✖ a-1, b-2, c-3

2. ✖ a-1, b-3, c-2

3. ✔ a-3, b-1, c-2

4. ✖ a-2, b-1, c-3



Question Number : 115 Question Id : 630680383767 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If the volume of a sphere has grown 8 times, then how many times has the surface area grown in the meanwhile?

Options :

1. ✖ 2 times

2. ✔ 4 times

3. ✖ 8 times

4. ✖ 16 times

Question Number : 116 Question Id : 630680383768 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

State whether the following statements are true or false.

- a) The sum of the areas of all 6 side faces of a cube is its lateral area.
- b) The formula to find the lateral area of a cube is  $LSA = 4x^2$ .

Options :

- 1. ✖ a-True, b-True
- 2. ✖ a-True, b-False
- 3. ✔ a-False, b-True
- 4. ✖ a-False, b-False

Question Number : 117 Question Id : 630680383769 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Find the total surface area of a cone whose radius is 7 inches and lateral surface area is  $154 \text{ in}^2$ .

Options :

- 1. ✖  $154 \text{ in}^2$
- 2. ✖  $176 \text{ in}^2$

3. ✓  $308 \text{ in}^2$

4. ✗  $330 \text{ in}^2$

**Question Number : 118 Question Id : 630680383770 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

The difference between the surface area of a cylinder and its curved surface area will give us:

**Options :**

1. ✗ area of its base

2. ✓ double the area of its base

3. ✗ half the area of its base

4. ✗ thrice the area of its base

**Question Number : 119 Question Id : 630680383771 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

A solid cube of side 7 cm is melted to make a cone of height 5 cm. Find the radius of the base of the cone.

**Options :**

1. ✗ 6.19 cm

2. ✗ 6.20 cm

3. ✓ 8.09 cm

4. ✗ 9.09 cm

Question Number : 120 Question Id : 630680383772 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

A semi-circular sheet of a metal of diameter 20 cm is bent into an open conical cup. What are the depth and capacity of the cup?

Options :

1. ✗ Depth =  $3\sqrt{5}$  cm, Capacity =  $\frac{2750}{21}\sqrt{5}$  cm<sup>3</sup>

2. ✓ Depth =  $5\sqrt{3}$  cm, Capacity =  $\frac{2750}{21}\sqrt{3}$  cm<sup>3</sup>

3. ✗ Depth =  $\sqrt{3}$  cm, Capacity =  $\frac{2750}{21}\sqrt{3}$  cm<sup>3</sup>

4. ✗ Depth =  $\sqrt{5}$  cm, Capacity =  $\frac{2750}{21}\sqrt{5}$  cm<sup>3</sup>

Question Number : 121 Question Id : 630680383773 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

In a fair, a man in one of the food stalls has a large cylindrical vessel of the base radius 12 cm filled up to a height 28 cm with mango juice. The juice is filled in small cylindrical glasses of radius 4 cm up to a height of 7 cm and sold for ₹4 each. How much money does the man receive by selling the juice completely?

Options :

1. ✓ ₹144

2. ✗ ₹100

3. ✗ ₹96

4. ✗ ₹76

Question Number : 122 Question Id : 630680383774 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Rain water which falls on a flat rectangular surface of length 9 m and breadth 7 m is transferred into a cylindrical vessel of internal radius 7 cm. The height of water in the cylindrical vessel if the rain fall is 1 cm is:

Options :

1. ✗ 4.91 m

2. ✗ 4.901 m

3. ✗ 4.91 m

4. ✓ 4.091 m

Question Number : 123 Question Id : 630680383775 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

A rubber soccer ball of outside diameter is 22 cm. The thickness of the rubber is 0.5 cm. What is the volume of the rubber to the nearest  $\text{cm}^3$ ?

Options :

1. ✖ 520  $\text{cm}^3$

2. ✖ 586  $\text{cm}^3$

3. ✖ 612  $\text{cm}^3$

4. ✔ 726  $\text{cm}^3$

Question Number : 124 Question Id : 630680383776 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

What is the mean of following data?

10, 8, 5, 10, 7, 8, 8, 9, 4, 9

Options :

1. ✖ 7.5

2. ✔ 7.8

3. ✖ 6.9

4. ✖ 8.1

Question Number : 125 Question Id : 630680383777 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The marks scored by students in a maths test are 17, 12, 7, 2, 15, 8, 14, 18, 11, 14, 18, 10, 4, 7, 8 and 5. Find the median of this data.

Options :

1. ✓ 10.5

2. ✗ 10

3. ✗ 11

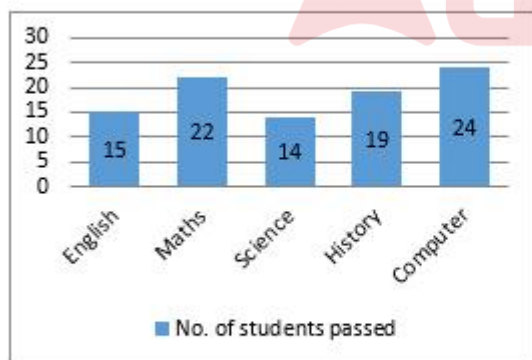
4. ✗ 11.5

Question Number : 126 Question Id : 630680383778 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Refer to the given graph and answer the question that follows.



How many students passed in Maths, Science and Computer?

Options :

1. ✗ 57

2. ✗ 46

3. ✖ 55

4. ✔ 60

Question Number : 127 Question Id : 630680383779 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If the mean of 1780, 1760, 1840, 1810, 1690, 1050, x, 1750, 1920 and 1950 is 1665, then what is the value of x?

Options :

1. ✔ 1100

2. ✖ 15,550

3. ✖ 1555

4. ✖ 16,650

Question Number : 128 Question Id : 630680383780 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Select the option that is true regarding the following two statements labelled Assertion (A) and Reason (R).

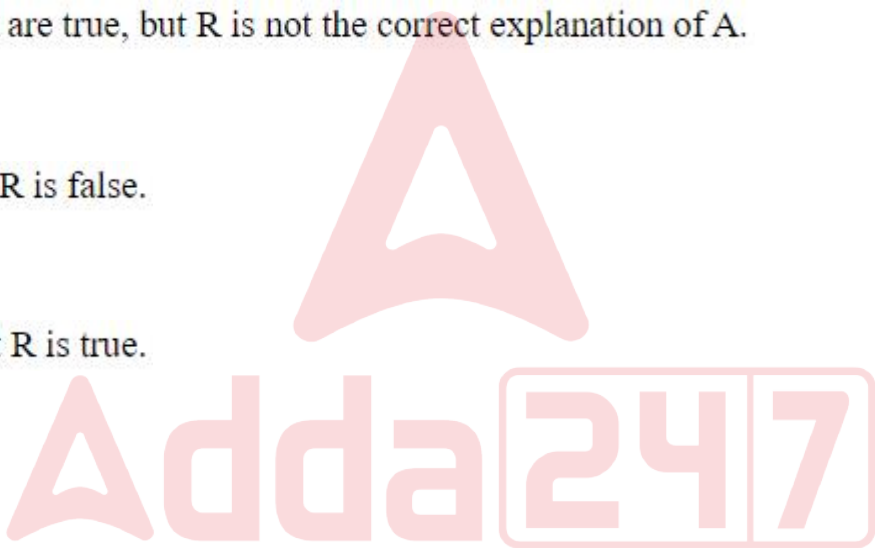
**Assertion (A):** The arithmetic mean of following data is 2.16.

|       |    |    |    |    |
|-------|----|----|----|----|
| $x_i$ | 0  | 1  | 2  | 3  |
| $f_i$ | 10 | 25 | 32 | 45 |

**Reason (R):**  $\text{Mean} = \bar{x} = \frac{\sum_{i=1}^n f_i x_i}{\sum_{i=1}^n f_i}$

**Options :**

- 1. ✖ Both A and R are true, and R is the correct explanation of A.
- 2. ✖ Both A and R are true, but R is not the correct explanation of A.
- 3. ✖ A is true, but R is false.
- 4. ✔ A is false, but R is true.



**Question Number : 129 Question Id : 630680383781 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1 Wrong Marks : 0.33**

If the Mean and Mode of a data are 15 and 12, respectively, then the median of the data is:

**Options :**

- 1. ✔ 14
- 2. ✖ 13.5
- 3. ✖ 13

4. ✖ 16

Question Number : 130 Question Id : 630680383782 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The mean of 55 items is 32, but three observations 43, 25 and 62 were wrongly taken instead of 34, 52 and 26. The correct mean is:

Options :

1. ✖ 32.74

2. ✔ 31.67

3. ✖ 33.21

4. ✖ 32.43



Question Number : 131 Question Id : 630680383783 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The upper limit of the median class for the following frequency distribution is:

|       |     |      |       |       |       |
|-------|-----|------|-------|-------|-------|
| Class | 0-5 | 5-10 | 10-15 | 15-20 | 20-25 |
| Freq. | 26  | 20   | 16    | 30    | 22    |

Options :

1. ✖ 5

2. ✖ 10

3. ✔ 15

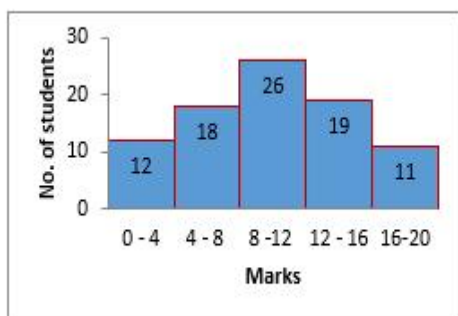
4. ✖ 20

Question Number : 132 Question Id : 630680383784 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The following histogram shows certain frequency distribution against class intervals.



The approximate mean of this distribution is:

Options :

1. ✔ 9.95

2. ✖ 8.56

3. ✖ 43

4. ✖ 26

Question Number : 133 Question Id : 630680383785 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Consider the frequency distribution.

|       |   |    |   |    |   |
|-------|---|----|---|----|---|
| $x_i$ | 0 | 1  | 2 | 3  | 4 |
| $f_i$ | 3 | 12 | 7 | 10 | 8 |

Match the pair given in column A with the correct value in column B.

| Column A  | Column B |
|-----------|----------|
| A) Median | 1) 2.2   |
| B) Mean   | 2) 2     |
| C) Mode   | 3) 1     |

Options :

1. ✖ A – 1, B – 2, C – 3
2. ✖ A – 2, B – 3, C – 1
3. ✔ A – 2, B – 1, C – 3
4. ✖ A – 3, B – 1, C – 2

Question Number : 134 Question Id : 630680383786 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Select the option that is true regarding the following two statements labelled Assertion (A) and Reason (R).

Assertion (A): To draw a histogram for the following frequency distribution table.

|       |     |      |       |       |
|-------|-----|------|-------|-------|
| Class | 0-5 | 5-10 | 10-20 | 20-35 |
| $f_i$ | 10  | 12   | 6     | 15    |

The adjusted frequency of the class 10-20 is 3.

Reason (R): Adjusted frequency = (Frequency of the class interval  $\times$  Minimum class width)/Class width of the required class.

Options :

- 1. ✓ Both A and R are true, and R is the correct explanation of A.
- 2. ✗ Both A and R are true, but R is not the correct explanation of A.
- 3. ✗ A is true, but R is false.
- 4. ✗ A is false, but R is true.

Question Number : 135 Question Id : 630680383787 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

For the following frequency distribution, the mean is:

|       |     |      |       |       |
|-------|-----|------|-------|-------|
| Class | 5-9 | 9-13 | 13-17 | 17-21 |
| $f_i$ | 5   | 3    | 10    | 2     |

Options :

- 1. ✗ 12

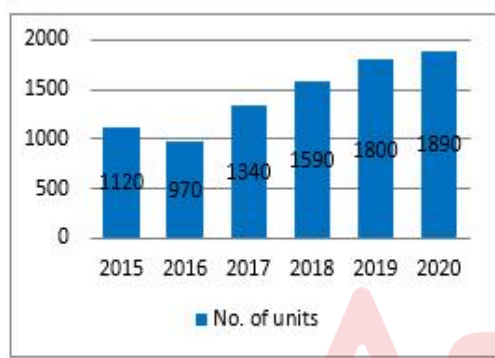
2. ✓ 12.8

3. ✖ 13

4. ✖ 13.2

Question Number : 136 Question Id : 630680383788 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0.33

The given graph shows the annual sale car units of an automobile company.



Which year has the highest percentage increase in sale? What is the average sale?

Note: For this question, discrepancy is found in question/answer. So, this question is ignored for all candidates.

Options :

1. 2017; 1552

2. 2018; 1552

3. 2018; 1449

4. 2017; 1449

Question Number : 137 Question Id : 630680383789 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The mode of the following frequency distribution is 14.

|       |     |      |       |       |
|-------|-----|------|-------|-------|
| Class | 4-8 | 8-12 | 12-16 | 16-20 |
| $f_i$ | 6   | x    | 14    | 8     |

Find the value of x .

Options :

1. ✖ 9

2. ✖ 10

3. ✖ 12

4. ✔ 8

Question Number : 138 Question Id : 630680383790 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

For the following frequency distribution, the median is:

|       |     |      |       |       |
|-------|-----|------|-------|-------|
| Class | 0-5 | 5-10 | 10-15 | 15-20 |
| $f_i$ | 5   | 7    | 12    | 6     |

Note: For this question, discrepancy is found in question/answer. So, this question is ignored for all candidates.

Options :

- 1. 15
- 2. 12.76
- 3. 10.625
- 4. 12.5

Question Number : 139 Question Id : 630680383791 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0  
Correct Marks : 1 Wrong Marks : 0.33

The value of  $\cos 0^\circ . \cos 3^\circ \cos 6^\circ . \cos 9^\circ \dots \cos 90^\circ$  is:

Options :

- 1. ✖ 1
- 2. ✔ 0

3. ✖  $\frac{1}{\sqrt{2}}$

4. ✖  $-\frac{1}{\sqrt{2}}$

Question Number : 140 Question Id : 630680383792 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $\sin \alpha = 3/5$  then  $\cos \alpha$  is equal to:

Options :

1. ✖  $\frac{5}{3}$

2. ✖  $\frac{3}{4}$

3. ✖  $\frac{3}{5}$

4. ✔  $\frac{4}{5}$

Question Number : 141 Question Id : 630680383793 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

In a right-angled triangle PQR, if  $\angle Q = 90^\circ$ ,  $QR = 12$  and  $PR = 13$ , then  $\cos P = ?$

Options :

1. ✖  $\frac{12}{13}$

2. ✖  $\frac{5}{12}$

3. ✔  $\frac{5}{13}$

4. ✖  $\sqrt{\frac{5}{12}}$

Question Number : 142 Question Id : 630680383794 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

$$\cos 30^\circ \cdot \operatorname{cosec} 60^\circ + \sec 30^\circ \cdot \sin 60^\circ = ?$$

Options :

1. ✔ 2

2. ✖ 1

3. ✖ 0

4. ✖  $\sqrt{3}$

Question Number : 143 Question Id : 630680383795 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $\cos\left(\frac{2A}{3}\right) = \sin(A - 40^\circ)$ , where  $\frac{2A}{3}$  is an acute angle, then the value of  $A$  is:

Options :

1. ✖  $30^\circ$

2. ✔  $78^\circ$

3. ✖  $60^\circ$

4. ✖  $12^\circ$

Question Number : 144 Question Id : 630680383796 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $\cos \alpha = \frac{2}{3}$ , then match column A with the correct value in column B.

| Column A                         | Column B                |
|----------------------------------|-------------------------|
| A) $\tan \alpha$                 | 1) $\frac{2}{\sqrt{5}}$ |
| B) $\operatorname{cosec} \alpha$ | 2) $\frac{\sqrt{5}}{2}$ |
| C) $\cot \alpha$                 | 3) $\frac{3}{\sqrt{5}}$ |

Options :

1. ✖ A – 1, B – 2, C – 3

2. ✔ A – 2, B – 3, C – 1

3. ✖  $A - 2, B - 1, C - 3$

4. ✖  $A - 3, B - 1, C - 2$

Question Number : 145 Question Id : 630680383797 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

The value of the expression

$$\{\sin(55^\circ + \theta) - \cos(35^\circ - \theta) + \sec(72^\circ + \theta) - \operatorname{cosec}(18^\circ - \theta)\} \text{ is:}$$

Options :

1. ✖ 1

2. ✖ 2

3. ✔ 0

4. ✖  $\frac{1}{2}$

Question Number : 146 Question Id : 630680383798 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $\cos 30^\circ \cdot \cot 60^\circ = x(\sec^2 30^\circ - \sin^2 45^\circ)$ , then the value of  $x$  is:

Options :

1. ✔  $\frac{3}{5}$

2. ✖

$$\frac{6}{5}$$

3. ✖ 1

4. ✖  $-\frac{6}{5}$

Question Number : 147 Question Id : 630680383799 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

$$\frac{\sin x + \tan x}{\sin x - \tan x} = ?$$

Options :

1. ✖  $\frac{1 - \sec x}{1 + \sec x}$

2. ✔  $\frac{1 + \sec x}{1 - \sec x}$

3. ✖  $\frac{1 + \operatorname{cosec} x}{1 - \operatorname{cosec} x}$

4. ✖  $\frac{1 - \operatorname{cosec} x}{1 + \operatorname{cosec} x}$

Question Number : 148 Question Id : 630680383800 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

If  $\cot(A - B) = \sqrt{3}$  and  $\operatorname{cosec}(A + B) = \frac{2}{\sqrt{3}}$ ,  $0 < A + B < 90^\circ$  and  $A > B$ , then find the values of A and B.

Options :

1. ✖  $A = 55^\circ$  and  $B = 25^\circ$
2. ✖  $A = 60^\circ$  and  $B = 30^\circ$
3. ✖  $A = 35^\circ$  and  $B = 25^\circ$
4. ✔  $A = 45^\circ$  and  $B = 15^\circ$

Question Number : 149 Question Id : 630680383801 Is Question Mandatory : No Calculator :  
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

What is the value of the following expression?

$$\left\{ \frac{\sec^2 63^\circ + \sec^2 27^\circ}{\operatorname{cosec}^2 63^\circ + \operatorname{cosec}^2 27^\circ} + \frac{1}{2} (\sec^2 25^\circ - \tan 25^\circ \cdot \cot 65^\circ) \right\}$$

Options :

1. ✔  $\frac{3}{2}$
2. ✖ 0
3. ✖ 1
4. ✖  $\frac{1}{2}$

Question Number : 150 Question Id : 630680383802 Is Question Mandatory : No Calculator :

**Test  
Prime**

By Adda247

# PREVIOUS YEAR PAPERS PDF



**PRACTICE MORE, SCORE HIGHER!**



**Free  
25,000+  
PDF's**

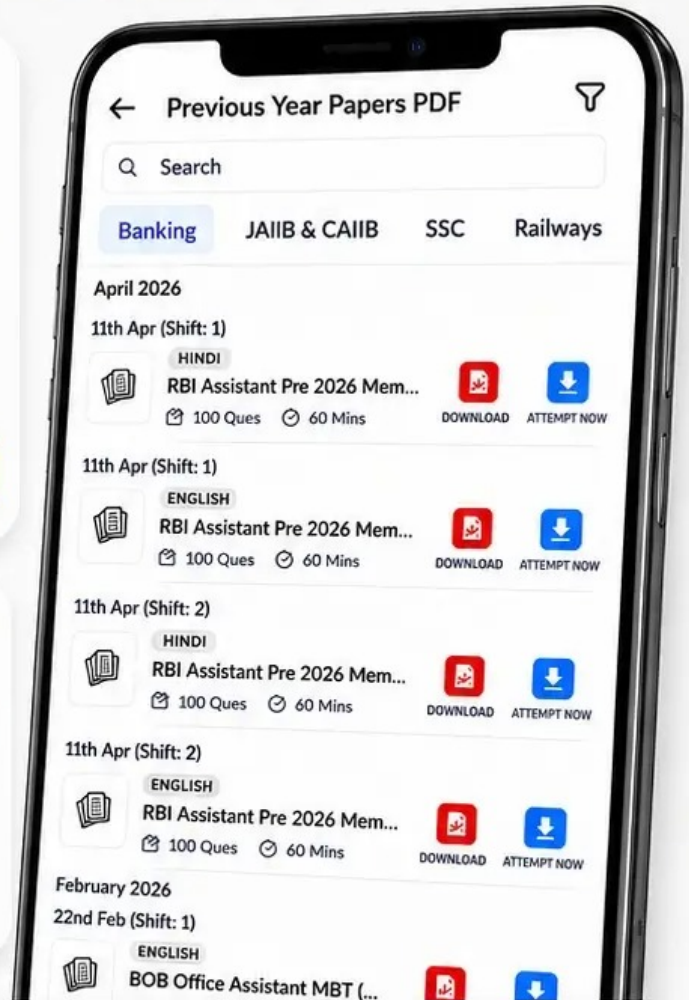
High-Quality | Exam-Wise | Updated Regularly



**ATTEMPT AS  
MOCK**



Turn PDFs into real exam experience.  
**Analyze. Improve. Succeed.**



Topic-wise &  
Exam-wise PDFs



Download &  
Study Offline



Attempt as Mock  
& Track Score



Smart Analysis  
& Performance

**AVAILABLE IN**



Banking



SSC



Railway



Teaching



UGC



Agriculture



Nursing



Bihar



UP



Punjab



WB



Odisha



TN



AP & Telangana



Haryana



**DOWNLOAD TEST PRIME**

**Test**

**Prime**



# SUCCESS GALLERY!

★ MEET THE ACHIEVERS ★



**Kunal, RRB JE**



**Shivam, UPSSSC AGTA**



**Priya, ANM**



**KHALILUR, LDA**



**Manoj, PWD**



**Atin, JENPAS**



**Shatarupa, OPSC**



**Arpita, JENPAS**



**Shital, SSC JE (Mech)**



**Nancy, UGC NET**



**Atul, SSC JE (ELCT)**



**Rahul, SSC JE (CIVIL)**



**Anand, SSC JE (ELCT)**



**Mohan, SSC JE (ELCT)**



**Saurabh, UGC NET**



**Ved, SSC JE (Mech)**

★ THEY DID IT. YOU CAN TOO ★

**READ THEIR STORIES!**



None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Wrong Marks : 0.33

Select the option that is true regarding the following two statements labelled Assertion (A) and Reason (R).

**Assertion (A):** In a  $\triangle ABC$ , right angled at B, if  $\sin A = \frac{6}{10}$ , then  $\sec A = \frac{5}{4}$  and  $\cot A = \frac{4}{3}$ .

**Reason (R):** For acute angle  $\theta$ ,  $\sec \theta = \frac{\text{Hypotenuse}}{\text{Base}}$  and  $\cot \theta = \frac{\text{Base}}{\text{Perpendicular}}$ .

**Options :**

1. ✓ Both A and R are true, and R is the correct explanation of A.
2. ✗ Both A and R are true, but R is not the correct explanation of A.
3. ✗ A is true, but R is false.
4. ✗ A is false, but R is true.

