

• Question No. 1

Each member of a club contributes as much rupees and as much paise as the number of members of the club. If the total contribution is Rs. 2525, then the number of members of the club is

**Options :**

1. 60
2. 45
3. 55
4. 50
- 5.

Answer : 50

• Question No. 2

The numerator of a fraction is multiple of two numbers. One of the numbers is greater than the other by 2. The greater number is smaller than the denominator by 4. If the denominator  $7+C$  ( $C > -7$ ) is a constant, then the minimum value of the fraction is

**Options :**

1. 5
2.  $1/5$
3. -5
4.  $-1/5$
- 5.

Answer :  $-1/5$

• Question No. 3

A number when divided by the sum of 555 and 445 gives two times their difference as quotient and 30 as the remainder. The number is

**Options :**

1. 220030
2. 22030
3. 1220
4. 1250
- 5.

Answer : 220030

• Question No. 4

When a number  $x$  is divided by a divisor it is seen that the divisor = 4 times the quotient = double the remainder. If the remainder is 80 then the value of  $x$  is

**Options :**

1. 6480
2. 9680
3. 8460
4. 4680
- 5.

Answer : 6480

• Question No. 5

On dividing a certain number by 342 we get 47 as remainder. If the same number is divided by 18, what will be the remainder ?

**Options :**

1. 15
2. 11
3. 17
4. 13

5.

Answer : 11

• Question No. 6

The sum of three numbers is 252. If the first number is thrice the second and third number is two-third of the first, then the second number is

**Options :**

1. 41
2. 21
3. 42
4. 84
- 5.

Answer : 42

• Question No. 7

The sum of squares of three positive integers is 323. If the sum of squares of two numbers is twice the third, their product is

**Options :**

1. 255
2. 260
3. 270
4. 265
- 5.

Answer : 255

• Question No. 8

The sum of three numbers is 2, the 1st number is  $\frac{1}{2}$  times the 2nd number and the 3rd number is  $\frac{1}{4}$  times the 2nd number. The 2nd number is

**Options :**

1.  $\frac{7}{6}$
2.  $\frac{8}{7}$
3.  $\frac{9}{8}$
4.  $\frac{10}{9}$
- 5.

Answer :  $\frac{8}{7}$

- Question No. 9

Three numbers are in Arithmetic Progression (AP) whose sum is 30 and the product is 910. Then the greatest number in the AP is

**Options :**

1. 17
2. 15
3. 13
4. 10
- 5.

Answer : 13

- Question No. 10

*Simplify :*

$$\sqrt[3]{-2197} \times \sqrt[3]{-125} \div \sqrt[3]{\frac{27}{512}}$$

**Options :**

1.  $\frac{492}{7}$

2.  $520/3$

3.  $554/7$

4.  $571/5$

5.

Answer :  $520/3$

• Question No. 11

A canal of a village can be cleaned by 24 villagers in 12 days. The number of days in which 36 villagers can clean the canal is ?

Options :

1. 18

2. 8

3. 72

4. 16

5.

Answer : 8

• Question No. 12

A and B can do a piece of work in 18 days, B and C in 24 days, A and C in 36 days. Working together they can do the work in

Options :

1. 12 days

2. 13 days

3. 16 days

4. 26 days

5.

Answer : 16 days

• Question No. 13

Ramesh and Rahman can do a work in 20 and 25 days respectively. After doing collectively 10 days of work, they leave the work due to illness and Suresh completes rest of the work in 3 days. How many days Suresh alone can take to complete the whole work ?

**Options :**

1. 32 days
2. 28 days
3. 29 days
4. 30 days
- 5.

Answer : 30 days

• Question No. 14

A can do as much work in 4 days as B can do in 5, and B can do as much work in 6 days as C in 7. In what time will C do a piece of work which A can do in a week ?

**Options :**

1.  $\frac{5}{24}$  days
2.  $\frac{4}{5}$  days
3.  $\frac{8}{15}$  days
4.  $\frac{6}{19}$  days
- 5.

Answer :  $\frac{5}{24}$  days

• Question No. 15

A can do a piece of work in 10 days and B can do it in 12 days. They work together for 3 days. Then B leaves and A alone continues. 2 days after that C joins and the work is completed in 2 days more. In how many days can C do it, if he works alone ?

**Options :**

1. 30 days
2. 50 days
3. 40 days
4. 60 days
- 5.

Answer : 40 days

• Question No. 16

The ratio of the amount of work done by  $(x-1)$  labours in  $(x+1)$  days and that done by  $(x+1)$  labours in  $(x+2)$  days is  $5 : 6$ . Then the value of  $x$  is

**Options :**

1. 16
2. 15
3. 17
4. 14
- 5.

Answer : 16

• Question No. 17

A book seller allowed 10% discount on printed price. He gets 30% commission from publisher. His profit in percent will be

**Options :**

1. 20
2.  $28\frac{4}{7}$
3. 25
4.  $26\frac{3}{7}$

5.

Answer : 28(4/7)

• Question No. 18

A dealer is selling an article at a discount of 5% on the Marked price. If the Marked price is 12% above the cost price and the article was sold for Rs. 532 then the cost price is (in Rs.)

**Options :**

1. 500

2. 525

3. 505

4. 520

5.

Answer : 500

• Question No. 19

A shopkeeper increases the price of an object by 40% and then sells it at 25% discount on the marked price. If the selling price of such an object be Rs. 2100, its cost price for the shopkeeper was ?

**Options :**

1. 3000

2. 1500

3. 1700

4. 2000

5.

Answer : 2000

• Question No. 20



The marked price of an article is Rs 5000. But due to a special festive offer a certain percent of discount is declared. Mr. X availed this opportunity and bought the article at reduced price. He then sold it at Rs. 5000 and thereby made a profit of  $11\frac{1}{9}\%$ . The percentage of discount allowed was ?

**Options :**

1. 10
2.  $3\frac{1}{3}$
3.  $7\frac{1}{2}$
4.  $11\frac{1}{9}$
- 5.

Answer : 10

- Question No. 21

Find the fraction which bears the same ratio to  $\frac{1}{27}$  that  $\frac{3}{7}$  does to  $\frac{5}{9}$ .

**Options :**

1.  $\frac{5}{9}$
2.  $\frac{1}{35}$
3.  $\frac{45}{7}$
4.  $\frac{7}{45}$
- 5.

Answer :  $\frac{1}{35}$

- Question No. 22

The ratio of number of boys to the number of girls in a school of 432 pupils is 5 : 4. When some new boys and girls are admitted, the number of boys increase by 12 and the ratio of the boys to girls changes to 7 : 6. The number of new girls admitted is

**Options :**

1. 12

2. 14

3. 24

4. 20

5.

Answer : 24

• Question No. 23

If the three numbers in the ratio 3:2:5 be such that the sum of the squares is equal to 1862 then which number is the middle one.

Options :

1. 16

2. 14

3. 13

4. 15

5.

Answer : 14

• Question No. 24

Two bottles contain acid and water in the ratio 2:3 and 1:2 respectively. These are mixed in the ratio 1:3. What is the ratio of acid and water in the new mixture ?

Options :

1. 7:13

2. 11:57

3. 23:37

4. 1:3

5.

Answer : 7:13

• Question No. 25

The ratio of the number of boys and girls in a school is 3:2. If 20% of the boys and 25% of the girls are scholarship holders, the percentage of the school students who are not scholarship holders is

**Options :**

1. 56
2. 78
3. 70
4. 80
- 5.

Answer : 78

• Question No. 26

In two types of brass, the ratios of Copper to Zinc are 8:3 and 15:7 respectively. If the two types of brass be melted and mixed in the ratio 5:2 a new type of brass is obtained. The ratio of Copper to Zinc in this new type of brass is

**Options :**

1. 3:2
2. 2:3
3. 3:4
4. 5:2
- 5.

Answer : 5:2

• Question No. 27

An hour-long test has 60 problems. If a student completes 30 problems in 25 minutes, then the required seconds he has taken on average for computing each of the remaining problems is

**Options :**

1. 70 seconds
2. 50 seconds
3. 40 seconds
4. 30 seconds
- 5.

Answer : 70 seconds

• Question No. 28

A and B have their annual average income Rs. 80,000. B and C have their annual average income Rs. 75,000. C and A have their annual average income Rs. 78,000. The annual income of A is ?

**Options :**

1. Rs. 81000
2. Rs. 82000
3. Rs. 83000
4. Rs. 84000
- 5.

Answer : Rs. 83000

• Question No. 29

A car travels from A to B with 40 Km/h and returns from B to A with 60 Km/h. Its average speed during the whole journey is

**Options :**

1. 48 km/h
2. 50 km/h
3. 45 km/h
4. 60 km/h
- 5.

Answer : 48 km/h

- Question No. 30

In the first 10 overs of a cricket game, the run rate was only 3.2. The run rate in the remaining 40 overs to reach the target of 282 runs is

**Options :**

1. 6.4
2. 6.3
3. 6.25
4. 6.5
- 5.

Answer : 6.25

- Question No. 31

The average (arithmetic mean) amount of savings of ten students is Rs. 600. Three of the students have no savings at all and each of the others have at least Rs. 250 including Nihar, who has exactly Rs. 1300. The largest amount, in Rs., that any one student could have is

**Options :**

1. 3250
2. 3450
3. 3650
4. 3850
- 5.

Answer : 3450

- Question No. 32

An Army of 12000 consists of Europeans and Indians. The average height of a European is 5ft 10 inches and that of an Indian is 5ft 10 inches and that of the whole army is 5ft  $9\frac{3}{4}$  inches. Then the number of Indians in the army is?

**Options :**

1. 3000
2. 4000
3. 5500
4. 2700
- 5.

Answer : 3000

• Question No. 33

By what fraction selling price (S.P.) must be multiplied to get the cost price (C.P.) if the loss is 20% ?

**Options :**

1.  $\frac{4}{5}$
2.  $\frac{8}{5}$
3.  $\frac{5}{4}$
4.  $\frac{6}{5}$
- 5.

Answer :  $\frac{5}{4}$

• Question No. 34

A,B and C together start a business. Three times the investment of A equals four times the Investment of B and the Capital of B is twice that of C. The ratio of share of each in the profit.

**Options :**

1. 8:3:6
2. 3:8:6
3. 3:6:8
4. 8:6:3
- 5.

Answer : 8:6:3

• Question No. 35

Ramesh sold a book at a loss of 30%. If he had sold it for Rs. 140 more, he would have made a profit of 40%. The cost price of the book is

**Options :**

1. Rs. 280
2. Rs. 200
3. Rs. 260
4. Rs. 300
- 5.

Answer : Rs. 200

• Question No. 36

A shopkeeper purchased 510 eggs at the rate of Rs. 20 per dozen. 30 eggs were broken on the way. In order to make a gain of 20%, he must sell the remaining eggs at the rate of

**Options :**

1. Rs. 22.50 per dozen
2. Rs. 25.50 per dozen
3. Rs. 26 per dozen
4. Rs. 26.50 per dozen
- 5.

Answer : Rs. 25.50 per dozen

• Question No. 37

A sells a watch to B and makes a loss of 12%. B makes a profit of  $12\frac{1}{2}\%$  by selling the watch to C. If A sells the watch to B at the cost of which C purchased it, then the percentage of loss or profit of A will be,

**Options :**

1. 1% loss
2. 1% profit
3. 2% loss
4. 2% profit
- 5.

Answer : 1% loss

• Question No. 38

A man buys 3 type-I cakes and 6 type-II cakes for Rs. 900. He sells type-I cakes at a profit of 15% and type-II cakes at a loss of 10%. If his overall profit is

**Options :**

1. 100, 100
2. 160, 70
3. 180, 60
4. 120, 90
- 5.

Answer : 160, 70

• Question No. 39

A Number is increased by 20%. To get back to the original number, the increased number is to be reduced by

**Options :**

1. 20%
2. 21%
3.  $16\frac{2}{3}\%$
4.  $14\frac{1}{3}\%$
- 5.



Answer :  $16\frac{2}{3}\%$

• Question No. 40

A Village lost 12% of its goats in a flood and 5% of remainder died from diseases. If the number left now is 8360. What was the original number before the flood?

**Options :**

1. 1000
2. 10000
3. 1,00,000
4. 8360
- 5.

Answer : 10000

• Question No. 41

A scored 72% in a paper with a maximum marks of 900 and 80% in another paper with a maximum marks of 700. If the result is based on the combined percentage of two papers, the combined percentage is

**Options :**

1. 75.5%
2. 76%
3. 76.5%
4. 77%
- 5.

Answer : 75.5%

• Question No. 42

An army lost 10% of its men in war, 10% of the remaining died due to disease and 10% of the rest were declared disabled. Thus the strength of the army was reduced to 7,29,000 active men. The original strength of the army was

**Options :**

1. 1500000
2. 1000000
3. 1200000
4. 1100000
- 5.

Answer : 1000000

• Question No. 43

A bus travels 150 Km in 3 hours and then travel next 2 hours at 60 Km/hr. Then the average speed of the bus will be

**Options :**

1. 55 Km/hr
2. 54 Km/hr
3. 50 Km/hr
4. 60 Km/h
- 5.

Answer : 54 Km/hr

• Question No. 44

A man can cover a certain distance in 3 hours 36 minutes if he walks at the rate of 5 Km/hr. If he covers the same distance on cycle at the rate of 24 Km/hr, then the time taken by him in minutes is

**Options :**

1. 40
2. 45
3. 50
4. 55
- 5.

Answer : 45

• Question No. 45

Due to inclement weather, an air plane reduced its speed by 300 Km/ hr, and reached the destination of 1200 km late by 2hrs. Then the schedule duration of the flight was.

**Options :**

1. 1 hour
2. 1.5 hour
3. 2 hour
4. 2.5 hour
- 5.

Answer : 2 hour

• Question No. 46

Three runners A,B and C run a race, with runner A finishing 12 meters ahead of runner B and 18 meters ahead of runner C, while runner B finishes 8 meters ahead of runner C. Each runner travels the entire distance at a constant speed. The length of the race is

**Options :**

1. 36 Metres
2. 48 Metres
3. 60 Metres
4. 72 Metres
- 5.

Answer : 48 Metres

• Question No. 47

The compound interest on Rs. 4000 for 4 years at 10% per annum will be

**Options :**

1. Rs. 1856.40
2. Rs. 1600
3. Rs. 1856
4. Rs. 1756.60
- 5.

Answer : Rs. 1856.40

• Question No. 48

A sum of Rs. 4000 is lent out in two parts, one at 8% simple interest and the other at 10% simple interest. If the annual interest is Rs. 352. The sum lent at 8% is 4000

**Options :**

1. Rs. 2900
2. Rs. 2200
3. Rs. 2400
4. Rs. 3100
- 5.

Answer : Rs. 2400

• Question No. 49

If the difference of the compound interest and the simple interest on a sum of money for 3 years is Rs. 186. Find the sum of money, if the rate of interest in both case be 10%

**Options :**

1. Rs. 5500
2. Rs.7200
3. Rs.6500
4. Rs.6000

5.

Answer : Rs.6000

• Question No. 50

A sum of money is invested at 20% compound interest (compounded annually). It would fetch Rs. 723 more if interest is compounded half-yearly. The sum is

**Options :**

1. Rs.15,000
2. Rs.30,000
3. Rs.20,000
4. Rs.7,500
- 5.

Answer : Rs.30,000

• Question No. 51

The height of an equilateral triangle is 18 cm. Its area is

1.  $36\sqrt{3}$  sq m.
2.  $108\sqrt{3}$  sq cm.
3. 108 sq cm.
4.  $96\sqrt{3}$  sq m.

**Options :**

1. 1
2. 2
3. 3
4. 4
- 5.

Answer : 2

- Question No. 52

If the sum of radius and height of a solid cylinder is 20 cm and its total surface area is  $880 \text{ cm}^2$  then its volume is

**Options :**

1.  $1760 \text{ cm}^3$
2.  $8800 \text{ cm}^3$
3.  $2002 \text{ cm}^3$
4.  $4804 \text{ cm}^3$
- 5.

Answer :  $2002 \text{ cm}^3$

- Question No. 53

A solid sphere and a solid hemisphere have the same total surface area. The ratio of their volumes is (Take,  $\pi = 22/7$ )

1.  $3\sqrt{3} : 4$
2.  $4 : 3\sqrt{3}$
3.  $3 : 4\sqrt{3}$
4.  $1 : 12\sqrt{3}$

**Options :**

1. 1
2. 2
3. 3
4. 4
- 5.



Answer : 1

• Question No. 54

The sides of a triangle are in the ratio  $1/2 : 1/3 : 1/4$  and its perimeter is 104 cm. The length of the longest side (in cm) is

**Options :**

1. 52
2. 48
3. 32
4. 26
- 5.

Answer : 48

• Question No. 55

The four walls and ceiling of a room of length 25 m, breadth 12 m and height 10 m are to be painted. Painter A can paint 200 m<sup>2</sup> in 5 days, Painter B can paint 250 m<sup>2</sup> in 2 days. If A and B work together, they will finish the job in

**Options :**

1. 6 days
2.  $6(10/33)$  days
3.  $7(10/33)$  days
4. 8 days
- 5.

Answer :  $6(10/33)$  days

• Question No. 56

The base of a right prism is a trapezium whose the length of parallel sides are 25 cm and 11 cm and the perpendicular distance between the parallel sides is 16 cm. If the height of the prism is 10 cm, then the volume of

the prism is

**Options :**

1. 1440 cu.cm
2. 1540 cu.cm
3. 2880 cu.cm
4. 960 cu.cm
- 5.

Answer : 2880 cu.cm

• Question No. 57

The external and the internal radii of a hollow right circular cylinder of height 15 cm are 6.75 cm and 5.25 cm respectively. If it is melted to form a solid cylinder of height half of the original cylinder, then the radius of the solid cylinder is

**Options :**

1. 6 cm
2. 6.5 cm
3. 7 cm
4. 7.25 cm
- 5.

Answer : 6 cm

• Question No. 58

The length and breadth of a rectangular piece of a land are in a ratio 5:3. The owner spent Rs. 6000 for surrounding it from all sides at Rs.7.50 per metre. The difference between its length and breadth is

**Options :**

1. 50 metres
2. 100 metres



3. 150 metres
4. 250 metres
- 5.

Answer : 100 metres

• Question No. 59

The ratio between the area of a square and that of a circle, when the length of a side of the square is equal to that of the diameter of the circle, is (take  $\pi = 22/7$ )

**Options :**

1. 14 : 11
2. 28 : 11
3. 7 : 22
4. 22 : 7
- 5.

Answer : 14 : 11

• Question No. 60

A piece of wire 132 cm long is bent successively in the shape of an equilateral triangle, a square and a circle. Then area will be longest in shape of

**Options :**

1. Circle
2. Equilateral triangle
3. Square
4. Equal in all the shapes
- 5.

Answer : Circle

- Question No. 61

If a cone is divided into two parts by drawing a plane through the midpoints of its axis, then the ratio of the volume of the 2 parts of the cone is

**Options :**

1. 1 : 2
2. 1 : 4
3. 1 : 7
4. 1 : 8
- 5.

Answer : 1 : 7

- Question No. 62

Two regular polygons are such that the ratio between their number of sides is 1:2 and the ratio of measures of their interior angles is 3:4. Then the number of sides of each polygon are

**Options :**

1. 10, 20
2. 4, 8
3. 3, 6
4. 5, 10
- 5.

Answer : 5, 10

- Question No. 63

In an isosceles triangle, the length of each equal side is twice the length of the third side. The ratio of areas of the isosceles triangle and an equilateral triangle with same perimeter is

1.  $30\sqrt{5} : 100$

2.  $32\sqrt{5} : 100$

3.  $36\sqrt{5} : 100$

4.  $42\sqrt{5} : 100$

**Options :**

1. 1

2. 2

3. 3

4. 4

5.

Answer : 3

• Question No. 64

A right circular cylinder is partially filled with water. Two iron spherical balls are completely immersed in the water so that the height of the water in the cylinder rises by 4 cm. If the radius of one ball is half of the other and the diameter of the cylinder is 18 cm, then the radii of the spherical balls are

**Options :**

1. 6 cm and 12 cm

2. 4 cm and 8 cm

3. 3 cm and 6 cm

4. 2 cm and 4 cm

5.

Answer : 3 cm and 6 cm

• Question No. 65

The whole surface area of a pyramid whose base is a regular polygon is  $340 \text{ cm}^2$  and area of its base is  $100 \text{ cm}^2$ . Area of each lateral face is  $30 \text{ cm}^2$ . Then the number of lateral faces is

**Options :**

1. 8
2. 9
3. 7
4. 10
- 5.

Answer : 8

- Question No. 66

If  $P = 99$ , then the value of  $P(P^2 + 3P + 3)$  is

**Options :**

1. 9999
2. 999999
3. 99999
4. 9999999
- 5.

Answer : 999999

- Question No. 67

If  $x + (1/x) = c + (1/c)$  then the value of  $x$

**Options :**

1.  $C, 1/C$
2.  $C, C^2$
3.  $C, 2C$
4.  $0, 1$
- 5.

Answer :  $C, 1/C$

- Question No. 68

If the sum of squares of two real numbers is 41 and their sum is 9. Then the sum of cubes of these two numbers is

**Options :**

1. 169
2. 209
3. 189
4. 198
- 5.

Answer : 189

- Question No. 69

A complete factorization of  $x^4 + 64$  is

1)  $(x^2 + 8)^2$

2)  $(x^2 + 8)(x^2 - 8)$

3)  $(x^2 - 4x + 8)(x^2 - 4x - 8)$

4)  $(x^2 + 4x + 8)(x^2 - 4x + 8)$

**Options :**

1. 1
2. 2
3. 3
4. 4
- 5.

Answer : 4

- Question No. 70

If  $a + b = 1$ , then  $a^4 + b^4 - a^3 - b^3 - 2a^2b^2 + ab$  is equal to

**Options :**

1. 1
2. 2
3. 4
4. 0
- 5.

Answer : 0

- Question No. 71

If  $x^2 + y^2 + 6x + 5 = 4(x - y)$  then  $x - y$  is

**Options :**

1. 1
2. -1
3. 0
4. 4
- 5.

Answer : 1

- Question No. 72

If  $a = 299$ ,  $b = 298$ ,  $c = 297$  then the value of  $2a^3 + 2b^3 + 2c^3 - 6abc$  is

**Options :**

1. 5154
2. 5267
3. 5364

4. 5456

5.

Answer : 5364

• Question No. 73

If  $x + (1/x) = \sqrt{3}$  the value of  $x^{18} + x^{12} + x^6 + 1$  is

**Options :**

1. 0

2. 1

3. 2

4. 3

5.

Answer : 0

• Question No. 74

If  $x = 1 + \sqrt{2} + \sqrt{3}$ , then the value of  $2x^4 - 8x^3 - 5x^2 + 26x - 28$  is

1.  $2\sqrt{2}$

2.  $3\sqrt{3}$

3.  $5\sqrt{5}$

4.  $6\sqrt{6}$

**Options :**

1. 1

2. 2

3. 3

4. 4

5.

Answer : 4

- Question No. 75

If  $2r = h + \sqrt{r^2 + h^2}$  then the ratio  $r:h$  ( $r \neq 0$ ) is

Options :

1. 1 : 2
2. 2 : 3
3. 4 : 3
4. 3 : 5
- 5.

Answer : 4 : 3

- Question No. 76

In an equilateral triangle ABC, G is the centroid. Each side of the triangle is 6 cm. The length of AG is

1.  $2\sqrt{2}$  cm
2.  $3\sqrt{2}$  cm
3.  $2\sqrt{3}$  cm
4.  $3\sqrt{3}$  cm

Options :

1. 1
2. 2
3. 3
4. 4
- 5.

Answer : 3



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- Question No. 77

PQ is a tangent to the circle at T. If  $TR = TS$  where R and S are points on the circle and  $\angle RST = 65^\circ$ , the  $\angle PTS =$

**Options :**

1.  $65^\circ$
2.  $130^\circ$
3.  $115^\circ$
4.  $55^\circ$
- 5.

Answer :  $115^\circ$

- Question No. 78

In  $\triangle ABC$ ,  $AC = BC$  and  $\angle ABC = 50^\circ$ , the side BC is produced to D so that  $BC = CD$  then the value of  $\angle BAD$  is

**Options :**

1.  $80^\circ$
2.  $40^\circ$
3.  $90^\circ$
4.  $50^\circ$
- 5.

Answer :  $90^\circ$

- Question No. 79

In a circle, a diameter AB and a chord PQ (which is not a diameter) intersect each other at X perpendicularly. If  $AX : BX = 3 : 2$  and the radius of the circle is 5 cm, then the length of chord PQ is

1.  $2\sqrt{13}$  cm
2.  $5\sqrt{3}$  cm

3.  $4\sqrt{6}$  cm

4.  $6\sqrt{5}$  cm

**Options :**

1. 1

2. 2

3. 3

4. 4

5.

Answer : 3

- Question No. 80

ABC is a triangle, PQ is line segment intersecting AB in P and AC in Q and  $PQ \parallel BC$ . The ratio of  $AP : BP = 3 : 5$  and length of PQ is 18 cm. The length of BC is

**Options :**

1. 28 cm

2. 48 cm

3. 84 cm

4. 42 cm

5.

Answer : 48 cm

- Question No. 81

If the parallel sides of a trapezium are 8 cm and 4 cm, M and N are the mid points of the diagonals of the trapezium, then length of MN is

**Options :**

1. 12 cm

- 2. 6 cm
- 3. 1 cm
- 4. 2 cm
- 5.

Answer : 2 cm

• Question No. 82

$\triangle ABC$  is isosceles having  $AB = AC$  and  $\angle A = 40^\circ$ . Bisectors  $PO$  and  $OQ$  of the exterior angles  $\angle ABD$  and  $\angle ACE$  formed by producing  $BC$  on both sides, meet at  $O$ . Then the value of  $\angle BOC$  is

Options :

- 1.  $70^\circ$
- 2.  $110^\circ$
- 3.  $80^\circ$
- 4.  $55^\circ$
- 5.

Answer :  $70^\circ$

• Question No. 83

An equilateral triangle of side 6 cm is inscribed in a circle. Then radius of the circle is

- 1.  $2\sqrt{3}$  cm
- 2.  $3\sqrt{2}$  cm
- 3.  $4\sqrt{3}$  cm
- 4.  $\sqrt{3}$  cm

Options :

- 1. 1
- 2. 2

3. 3

4. 4

5.

Answer : 1

• Question No. 84

In a circle with centre O, AB is a diameter and CD is a chord which is equal to the radius OC. AC and BD are extended in such a way that they intersect each other at a point P, exterior to the circle. The measure of  $\angle APB$  is

**Options :**

1.  $30^\circ$

2.  $45^\circ$

3.  $60^\circ$

4.  $90^\circ$

5.

Answer :  $60^\circ$

• Question No. 85

Two chords AB and CD of a circle with centre O intersect at P. If  $\angle APC = 40^\circ$ . Then the value of  $\angle AOC + \angle BOD$  is

**Options :**

1.  $50^\circ$

2.  $60^\circ$

3.  $80^\circ$

4.  $120^\circ$

5.

Answer :  $80^\circ$

• Question No. 86

If  $x \tan 60^\circ + \cos 45^\circ = \sec 45^\circ$  then the value of  $x^2 + 1$  is

**Options :**

1.  $6/7$
2.  $7/6$
3.  $5/6$
4.  $6/5$
- 5.

Answer :  $7/6$

- Question No. 87

$x, y$  be two acute angles,  $x + y$

1.  $\sqrt{3}$
2.  $1/\sqrt{3}$
3. 1
4.  $2+\sqrt{2}$

**Options :**

1. 1
2. 2
3. 3
4. 4
- 5.

Answer : 3

- Question No. 88

If  $a^2 \sec^2 x - b^2 \tan^2 x = c^2$  then the value of  $\sec^2 x + \tan^2 x$  is equal to (assume  $b^2 \neq a^2$ )

**Options :**

1.  $(b^2 - a^2 + 2c^2 / b^2 + a^2)$
2.  $(b^2 + a^2 - 2c^2 / b^2 - a^2)$
3.  $(b^2 - a^2 - 2c^2 / b^2 + a^2)$
4.  $(b^2 - a^2 / b^2 + a^2 + 2c^2)$
- 5.

Answer :  $(b^2 + a^2 - 2c^2 / b^2 - a^2)$

- Question No. 89

$(1 + \sec 20^\circ + \cot 70^\circ)(1 - \operatorname{cosec} 20^\circ + \tan 70^\circ)$  is equal to

**Options :**

1. 0
2. 1
3. 2
4. 3
- 5.

Answer : 2

- Question No. 90

If  $\tan 4\alpha + \tan 2\alpha = 1$  then the value of  $\cos 4\alpha + \cos 2\alpha$  is

**Options :**

1. 2
2. 0
3. 1
4. -1
- 5.

Answer : 1

- Question No. 91

The value of  $8(\sin^6 \theta + \cos^6 \theta) - 12(\sin^4 \theta + \cos^4 \theta)$  is equal to

**Options :**

1. 20
2. -20
3. -4
4. 4
- 5.

Answer : -4

- Question No. 92

An aeroplane flying horizontally at a height of 3 Km. above the ground is observed at a certain point on earth to subtend an angle of  $60^\circ$ . After 15 sec flight, its angle of elevation is changed to  $30^\circ$ . The speed of the aeroplane (taking  $\sqrt{3} = 1.732$ ) is

**Options :**

1. 230.63 m/sec
2. 230.93 m/sec
3. 235.85 m/sec
4. 236.25 m/sec
- 5.

Answer : 230.93 m/sec

- Question No. 93

If the angle of elevation of the sun decreases from  $45^\circ$  to  $30^\circ$ , then the length of the shadow of a pillar increases by 60m. The height of the pillar is

1.  $60(\sqrt{3}+1)$  m

2.  $30(\sqrt{3}-1)$  m
3.  $30(\sqrt{3}+1)$  m
4.  $60(\sqrt{3}-1)$  m

**Options :**

1. 1
2. 2
3. 3
4. 4
- 5.

Answer : 3

• Question No. 94

The angle of elevation of the top of a tower, vertically erected in the middle of a paddy field, from two points on a horizontal line through the foot of the tower are given to be  $\alpha$  and  $\beta$  ( $\alpha > \beta$ ). The height of the tower is  $h$  unit. A possible distance (in the same unit) between the points is

1.  $h(\cot \alpha - \cot \beta) / \cos(\alpha + \beta)$
2.  $h(\cot \alpha - \cot \beta)$
3.  $h(\tan \alpha - \tan \beta) / \tan \alpha + \tan \beta$
4.  $h(\cot \alpha + \cot \beta)$

**Options :**

1. 1
2. 2
3. 3



4. 4

5.

Answer : 4

• Question No. 95

The angle of elevation of the top of an unfinished pillar at a point 150 metres from its base is  $30^\circ$ . The height (in metres) that the pillar must be raised so that its angle of elevation at the same point may be  $45^\circ$ , is (taking  $\sqrt{3} = 1.732$ )

**Options :**

1. 63.4

2. 86.6

3. 126.8

4. 173.2

5.

Answer : 63.4

• Question No. 96

What is the difference between the total sale of English newspapers and the total sale of Hindi newspapers in all the localities together.

**Options :**

1. 7500

2. 5600

3. 6500

4. 5700

5.

Answer : 6500

- Question No. 97

What is the average of difference of sales of Hindi and English newspapers in all localities ?

**Options :**

1. 2000
2. 2300
3. 2100
4. 2200
- 5.

Answer : 2300

- Question No. 98

What is the approximate sum of the ratios of sales of English and Hindi newspapers in all localities ?

**Options :**

1. 4.5
2. 5.75
3. 6.36
4. 7.82
- 5.

Answer : 6.36

- Question No. 99

What is the ratio of average number of English newspapers from the localities B, C and E to the average number of Hindi newspapers from the localities A and D ?

**Options :**

1. 10 : 9
2. 9 : 10

3. 11 : 9

4. 9 : 11

5.

Answer : 10 : 9

• Question No. 100

What is the ratio of the average number of sale of English newspapers in localities B and D together to the average sale of Hindi newspapers in all the localities ?

**Options :**

1. 34 : 43

2. 40 : 33

3. 33 : 40

4. 43 : 33

5.

Answer : 40 : 33

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