Ssc Cgl Tier II Previous Year Question Paper Overview

Here, you can solve all the questions asked in Ssc Cgl Tier II Previous Year Question Paper on 2016-11-30 in the Morning exam. The detailed solutions are also provided for every previous year question and some of these questions can be asked again in your Ssc Cgl Tier II exam. There are 100 questions in the exam and 120 minutes are provided for the Ssc Cgl Tier II exam. The Cutoff of the exam was 150 marks hence you should try to score at least 160 marks.

Ssc Cgl Tier II Previous Year Question Paper : Questions and Solutions

Question 1 :

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%.

Difficulty : Moderate **Average Time : 47 Seconds**

Options :

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

Solution :

The correct answer is **option 4** i.e. **Rs. 6000**

Difference (CI - SI) = $[P \times R^2]/[100^3 (300 + R)]$

$186 = [P \times R^2]/[100^3 (300 + R)]$

$186 = [P \times 10^2]/[100^3 (300 + 10)]$

$186 = [P \times 100]/[100^3 (310)]$

P = Rs. 6000

Question 2 :

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?

Difficulty : Moderate **Average Time : 65 Seconds**

Options :

1. Rs. 15,000
2. Rs. 30,000
3. Rs. 20,000
4. Rs. 72,300

Solution :

The correct answer is **option 4** i.e. **Rs. 72,300**

$P(1+ 20/2\times100)^2$ - P(1+20/100) = 723

P(1.21) - (1.2) = 723

P = Rs 72,300

Question 3 :

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

Difficulty : Moderate **Average Time : 44 Seconds**

Options :

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

Solution :

The correct answer is **option 2** i.e. **3450.**

Sum of amount savings of ten students = 600 × 10 = Rs 6000

Three students saving = 0

Remaining seven have savings = Rs 6000

Nihar has savings = Rs 1300

Remaining six have savings = 6000 - 1300 = Rs 4700

Out of six, Let 5 have at least Rs 250 saving and 6th has a x maximum saving

Now, 5 × 250 + x = 4700

x = 3450

Question 4 :

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

Difficulty : Moderate **Average Time : 51 Seconds**

Options :

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

Solution :

The correct answer is option 1

$[(x-1)(x+1)]/[(x+1)(x+2)] = 5/6$

$(x^2-1)/(x^2+3x+2) = 5/6$

$x^2 - 15x - 16 = 0$

$(x-16)(x+1) = 0$

$x = 16$

Question 5 :

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

Difficulty : Moderate **Average Time : 40 Seconds**

Options :

100, 100

2. 160, 70
3. 180, 60
4. 120, 90

Solution :

The correct answer is option 2

Let the cost of type I and II cakes = Rs. x and y

Now, 3x + 6y = 900

x + 2y = 300 .....(1)

Also,

3 × 15x/100 - 6 × 10y/100 = 300

3x - 4y = 200 .....(II)

Solving both

x = 160 & y = 70

Question 6 :

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?

Difficulty : Moderate **Average Time : 49 Seconds**

Options :

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

Solution :

The correct answer is **option 2** i.e **45**

ATQ

$s_1t_1 = s_2t_2$

$5 \times 216 = 24t_2$

$t_2 = 45$ min

Question 7 :

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?

Difficulty : Moderate

Average Time : 43 Seconds

Options :

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

Solution :

The correct answer is **option 1** i.e. **75.5%**

Combined percentage = (7.2% of 900 + 80% of 700)/(900 + 700) × 100

= (648 + 560)/(1600) × 100

= 1208/1600 × 100 = 75.5%

Question 8 :

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?

Difficulty : Moderate

Average Time : 51 Seconds

Options :

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

Solution :

The correct answer is **option 2** i.e. **1000000**

Let the original strength of army = x

Now,

x × 90/100 × 90/100 × 90/100 = 729000

x = 1000000

Question 9 :

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

Difficulty : Moderate **Average Time : 38 Seconds**

Options :

1. 20%
2. 21%
3. 50/3%
4. 43/3%

Solution :

The correct answer is option 3

% reduction number $= 16\frac{2}{3}\%$

$= 16\frac{2}{3}\%$

$= 16\frac{2}{3}\%$

Question 10 :

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 orignal number before the flood?

Difficulty : Moderate **Average Time : 54 Seconds**

Options :

1. 1000
2. 10000
3. 100000
4. 8360

Solution :

The correct answer is **option 2** i.e. **10000**

Let the number of goats = x

Now,

x × 88/100 × 95/100 = 8360

x = 10000

Question 11 :

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

Difficulty : Moderate **Average Time : 34 Seconds**

Options :

1. 363 sq. m.
2. 1083 sq. cm
3. 108 sq. cm
4. 963 sq. m.

Solution :

The correct answer is **option 2** i.e. **1083 sq. cm**

Suppose the side of equilateral triangle = a cm

Height of the equilateral triangle:

h = 18 cm

3a/2 = 18

a = 123 cm

Required Area = $3a^2/4$

$= (3/4)(123)^2$

$= 1083\ cm^2$

Question 12 :

If the sum of radius and height of a solid cylinder is 20 cm and its total surface area is 880 cm2 then its volume is ?

Difficulty : Moderate **Average Time : 54 Seconds**

Options :

1. $1760\ cm^3$
2. $8800\ cm^3$
3. $2002\ cm^3$
4. $4804\ cm^3$

Solution :

The correct answer is option 3

Radius + Height = 20 cm

TSA of cylinder = $880\ cm^3$

$2r(r+h) = 880$

$2 \times 22/7 \times r \times 20 = 880$

$r = 7$ cm

$h = 20 - 7 = 13$ cm

Volume of cylinder = $r^2h = 22/7 \times (7)^2 \times 13 = 2002\ cm^3$

Question 13 :

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 ?

Difficulty : Moderate **Average Time : 56 Seconds**

Options :

1. 36 Metres

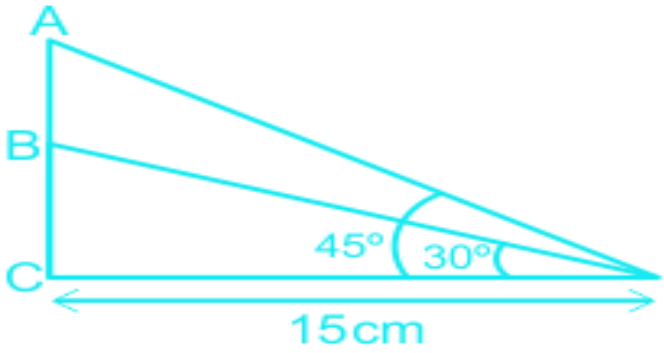
48 Metres

3. 60 Metres
4. 72 Metres

Solution :

20The correct answer is option 2

ATQ,



Clearly, while B covers 12 m, he makes a gap of 20 m with C to make gap of 8 m (24), he must have covered = 12 × 4 = 48 m

Question 14 :

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

Difficulty : Moderate | **Average Time : 41 Seconds**

Options :

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

Solution :

The correct answer is **option 1** i.e. **Rs. 1856.40**

Compound interest = $4000(1+ 10/100)^4$ - 4000

= 5856.40 - 4000 = 1856.40

Question 15 :

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 ?

Difficulty : Moderate

Average Time : 43 Seconds

Options :

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

Solution :

The correct answer is option 3

Let the amount lent at 8% SI = Rs x

And amount lent at 10% SI = Rs (4000 - x)

Now,

(x ×8 × 1)/100 + [(4000 - x) 10 × 1]/100 = 352

8x + 40000 - 10x = 35200

x = Rs 2400

Question 16 :

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

Difficulty : Moderate

Average Time : 46 Seconds

Options :

1. Rs. 22.50/dozen
2. Rs. 25.50/dozen
3. Rs. 26/dozen
4. Rs. 26.50/dozen

Solution :

The correct answer is**Option 2** i.e. **Rs. 25.50/dozen.**

Cost of 510 eggs = 20/12 × 510 = Rs 850

To make 20% profit,

He must sell all the eggs at price = 850 × 120/100 = Rs 1020

30 eggs were broken:

He must sell 480 eggs at price = 1020/480 × 12 = Rs 25.50/dozen

Question 17 :
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

Difficulty : Moderate **Average Time : 48 Seconds**

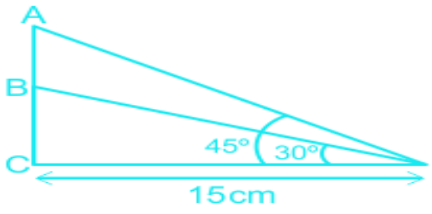
Options :

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

Solution :
The correct answer is option 2

Let the cost of book = Rs. 100

Now,



So, when he sold for 70 more, CP = 100

Now, when he sold for 140 more , CP = 200

Question 18 :
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.

Difficulty : Moderate **Average Time : 49 Seconds**

Options :

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

Solution :

The correct answer is **option 4** i.e. **8 : 6 : 3**

ATQ

3A = 4B and B = 2C

4B = 8C

3A = 4B = 8C

A/8 = B/6 = C/3

Required ratio of shares of each in profit = 8 : 6 : 3

Question 19 :

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:

Difficulty : Moderate **Average Time : 45 Seconds**

Options :

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

Solution :

The correct answer is **option 4** i.e. **50**

Let the number of members of the club = x

Now,

$(x + x/100)\ x = 2525$

$1.01\ x^2 = 2525$

$x = 50$

Hence,

Number of members of the club = 50

Question 20 :

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:

Difficulty : Moderate **Average Time : 58 Seconds**

Options :

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

Solution :

The correct answer is **option 4** i.e. **-1/5**

Let numerator = a × b, [where a = b + 2]

Denominator = c + 7

Now,

a = Denominator - 4 = c + 7 - 4 = c + 3

Also, b = a - 2

b = c + 1

Fraction = $[(c + 3)(c + 1)]/(c + 7) = (c^2 + 4c + 3)/(c + 7) = [(c + 2)^2 - 1]/(c + 7)$

Since c + 7 is constant, the fraction will be minimum when the numerator is minimum.

Numerator will be minimum, when c + 2 = 0, i.e. c = -2

Fraction minimum value = [(-2 + 2) - 1]/(-2 + 7) = -1/5

Question 21 :

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

Difficulty : Moderate **Average Time : 57 Seconds**

Options :

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

Solution :

The correct answer is option 1

Divisor = 2(555-445) = 220

Remainder = 30

Dividend = Number = Divisor × Quotient + Remainder = 1000 × 220 + 30 = 220030

Question 22 :

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

Difficulty : Moderate **Average Time : 37 Seconds**

Options :

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

Solution :

The correct answer is option 1

Divisor = 4 Quotient = 2 Reaminder

We have

Remainder = 80

Quotient = 40

And, Divisor = 160

Number, x = Divisor × Quotient + Reaminder = 160×40+80 = 6480

Question 23 :
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 ?

Difficulty : Moderate **Average Time : 38 Seconds**

Options :

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

Solution :
The correct answer is option 2

Let the number be x

therefore, x = 342p + 47

When x is divided by 18

Remainder = 47 - 36 = 11

Question 24 :
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:

Difficulty : Moderate **Average Time : 38 Seconds**

Options :

1. 41

21

3. 42

4. 84

Solution :

The correct answer is **option 3** i.e. **42**

Let the three numbers be a, b and c

a + b + c = 252 .....(1)

Now, a = 3b and c = 2a/3

a = 3c/2

Therefore,

a = 3b = 3c/2

a/3 = b = c/2 .....(2)

Using (1) and (2), we get:

3b + b + 2b = 252

6b = 252

b = 42

Question 25 :

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 ?

Difficulty : Moderate | **Average Time : 48 Seconds**

Options :

1. 255

2. 260

3. 265

4. 270

Solution :

The correct answer is option1

Now, $a^2 + b^2 + c^2 = 323$ .....(1)

And, $a^2 + b^2 = 2c$ .....(2)

using (1) and (2)

$2c + c^2 = 323$

$c^2+2c - 323 = 0$

$(c + 19)(c - 17) = 0$

$c = 17, c = -19$

But c is not equal to -19

Now, $a^2 + b^2 = 34$

a = 2 and b = 5 satisfy the equation

$abc = 3 \times 5 \times 17 = 255$

Question 26 :

The sum of three numbers is 2, the 1st number is 1/2 times the 2nd number and the 3rd number is 1/4 times the 2nd number. The 2nd number is:

Difficulty : Moderate | **Average Time : 55 Seconds**

Options :

1. 7/6
2. 8/7
3. 9/8
4. 10/9

Solution :

The correct answer is **option 2** i.e. **8/7**

Given,

a + b + c = 2

a = b/2, c = b/4

Now,

b/2 + b + b/4 = 2

(2b + 4b + b)/4 = 2

7b/4 = 2

b = 8/7

Question 27 :

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?

Difficulty : Moderate **Average Time : 49 Seconds**

Options :

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

Solution :

The correct answer is **option 3** i.e. **Rs. 83000**

A + B = 2 × 80000 = 160000

B + C = 2 × 75000 = 150000

C + A = 2 × 78000 = 156000

2(A + B + C) = 466000

A + B + C = 233000

A = 83000

Question 28 :

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?

Difficulty : Moderate

Average Time : 44 Seconds

Options :

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

Solution :

The correct answer is **option 3** i.e. **2 hour**

Time taken by airplane = 1200/300 = 4 hr

Since, it is late by 2 hr

Schedule duration = 4 - 2 = 2 hr

Question 29 :

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?

Difficulty : Moderate

Average Time : 39 Seconds

Options :

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

Solution :

The correct answer is **option 2** i.e. **54 Km/hr**

As we know,

Distance = Speed × Time

= 60 × 2 = 120 km

Total distance = 120 + 150 = 270 km

Total time = 3 + 2 = 5 hours

Average Speed = Total distance/Total time

= 270/5 = 54 km/h

Question 30 :

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

Difficulty : Moderate **Average Time : 45 Seconds**

Options :

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

Solution :

The correct answer is **option 3** i.e. **13**

Let the numbers in AP be a - d, a, a + d

a - d + a + a + d = 30

3a = 30

a = 10

Also

(a - d)(a)(a + d) = 910

(10 - d)(10)(10 + d) = 910

$100 - d^2 = 91$

d = 3 or -3

Thus, the number are 7, 10 and 13 or 13, 10, 7.

Hence, the greatest no is 13.

Question 31 :

Simplify: ?-2197 × ?-125 ÷ ?(27/512)

Difficulty : Moderate

Average Time : 56 Seconds

Options :

1. 492/7
2. 520/3
3. 554/7
4. 571/5

Solution :

The correct answer is option 2

âˆ›-2197 × âˆ›-125 ÷ âˆ›(27/512) = (-13) × (-5) × (8/3) = 520/3

Question 32 :

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?

Difficulty : Moderate

Average Time : 35 Seconds

Options :

1. 16
2. 8
3. 72
4. 16

Solution :

The correct answer is **option 2** i.e. **8**

Required no. of days = (24 × 12)/36

= 8 days

Question 33 :

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?

Difficulty : Moderate

Average Time : 41 Seconds

Options :

12

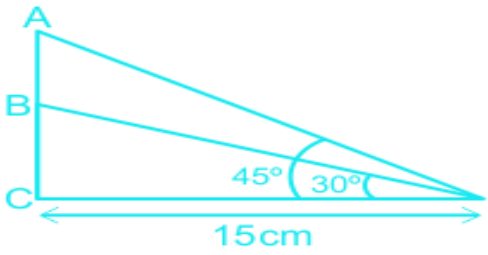
2. 13
3. 16
4. 26

Solution :

The correct answer is **option 3** i.e. **16**

LCM of (10, 24, 36)

LCM = 72 = total work unit



(A + B) + (B + C) + (A + C) = 4 + 3 + 2

2(A + B + C) = 9

A + B + C = 9/2 units/day

Working together, they can complete the work in = 72/(9/2) = 16 days

Question 34 :

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?

Difficulty : Moderate

Average Time : 54 Seconds

Options :

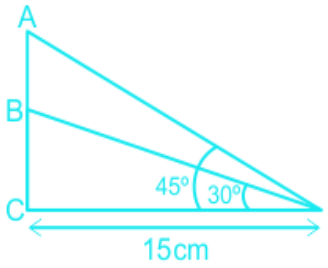
1. 32 days
2. 28 days
3. 29 days
4. 30 days

Solution :

The correct answer is **option 4** i.e **30 days**

LCM of (20, 25)

LCM = 100 units



In 10 days, they together do = (5 + 4) × 10 = 90 days

Reamining units (100 - 90) = 10 days

Suresh completes 10 units in 3 days

his work efficiancy = 10/3 unit/day

Suresh alone can do work in 10/(10/3) = 30 days

Question 35 :

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

Difficulty : Moderate

Average Time : 57 Seconds

Options :

1. 245/24 days
2. 49/5 days
3. 85/15 days
4. 61/19 days

Solution :

The correct answer is **option 1** i.e. **245/24 days**

Here, 4A = 5B and 6B = 7C

A/5 = B/4

B/7 = C/6

A : B : C = 35 : 28 : 24

A can do work in week i.e. 7 days

C can do that work = (35 × 7)/24 = 245/24 days

Question 36 :

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?

Difficulty : Moderate **Average Time : 53 Seconds**

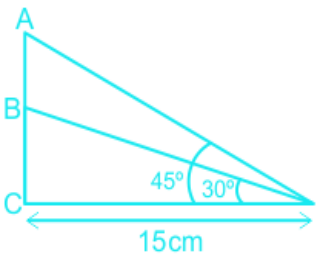
Options :

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

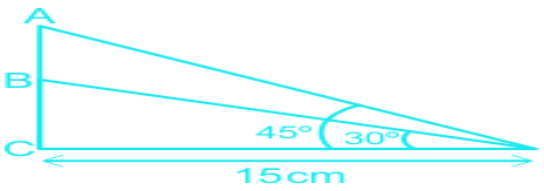
Solution :

The correct answer is **option 3** i.e. **40 days**

Let total work = 60 units



Now,



Remaining work done by A and C = 60 - 33 - 12 = 15 units

They do 15 units in 2 days

They do 15/2 unit/day

Out of 15 units, C does = 15/2 - 6 = 3/2 units/day

C alone can do work = 60/(3/2) = 40 days

Question 37 :
By what fraction selling price (S.P.) must be multiplied to get the cost price (C.P.) if the loss is 20% ?

Difficulty : Moderate **Average Time : 59 Seconds**

Options :

1. 4/5
2. 8/5
3. 5/4
4. 6/5

Solution :
The correct answer is option 3

Let cost price = Rs 100

Selling price = 150 × 80/100 = Rs. 80

Factor by which the selling price must be multiplied = 100/80 = 5/4

Question 38 :
A bookseller allowed a 10% discount on printed prices. He gets a 30% commission from the publisher. His profit in percent will be?

Difficulty : Moderate **Average Time : 36 Seconds**

Options :

1. 20
2. 200/7
3. 25
4. 189/7

Solution :

The correct answer is **option 2** i.e. **200/7**

Let the printed price of book = Rs 100

Now, he gives 10% discount on price:

So,

Selling price of book = 100 × 90/00 = Rs 90

Book seller purchases book at = 100 × 70/100 = Rs 70

Hence,

Profit% = (90 - 70)/70 × 100 = 200/7

Question 39 :

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.)

Difficulty : Moderate **Average Time : 48 Seconds**

Options :

1. 500
2. 525
3. 505
4. 520

Solution :

SP of article = 532

MP of article = 532/95 × 100 = 560

CP of article= 560/112 × 100 = Rs 500

Question 40 :

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 ?

Difficulty : Moderate **Average Time : 37 Seconds**

Options :

1. 3000

1500

3. 1750
4. 2000

Solution :

SP of object = Rs 2100

MP of object = (2100×100)/75 = 2800

CP of object = (2800×100)/140 = Rs 2000

Question 41 :

The marked price of an article is Rs. 5000. But due to special festival 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 there by made profit of 100/9%. The percentage of discount allowed was?

Difficulty : Moderate **Average Time : 41 Seconds**

Options :

1. 10
2. 10/3
3. 15/2
4. 100/9

Solution :

The correct answer is option 1

Mr. X bought article at cost = (5000×100)/(100+100/9) = 4500

Discount % allowed was = (5000-4500)/5000 × 100 = (500×100/5000) = 10%

Question 42 :

Find the fraction which bears the same ratio to 1/27 that 3/7 does to 5/9 .

Difficulty : Moderate **Average Time : 32 Seconds**

Options :

1. 5/9
2. 1/35

45/7

4. 7/45

Solution :

The correct answer is option 2

Let fraction = x

Also, Now

x/(1/27 0 = (3/7)/(5/9)

27x = 27/35

x = 1/35

Question 43 :

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 ?

Difficulty : Moderate | **Average Time : 42 Seconds**

Options :

1. 12
2. 14
3. 24
4. 20

Solution :

The correct answer is option 3

Total no. of student = 432

No. of boys = 5/6 × 432 = 240

No. of girls = 432 - 240 = 192

No. of boys = 240 + 12 = 252

Let no. of girls admitted = x

252/192+x = 7/6

x = 24

Question 44 :

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 _____.

Difficulty : Moderate

Average Time : 44 Seconds

Options :

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

Solution :

The correct answer is **option 2** i.e. **78.**

The ratio of no. of boys to girls = 3 : 2

No. of boys and girls are 3x and 2x respectively

% of students who are not scholarship holders

= (80% of 3x + 75% of 2x)/(3x + 2x) × 100

= (2.4x + 1.5x)/5x × 100

= 3.9x/5x × 100

= 78%

Question 45 :

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 and Zinc in this new type of brass is?

Difficulty : Moderate

Average Time : 53 Seconds

Options :

1. 3 : 2
2. 2 : 3
3. 3 : 4

5 : 2

Solution :
The correct answer is **option 4** i.e. **5 : 2**

Ratio of copper and

zinc in new mixture = (8/11 × 5 + 15/22 × 2)/(3/11 × 5 + 7/22 × 2)

= (110/22)/(44/22) = 5/2

Question 46 :
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?

Difficulty : Moderate **Average Time : 44 Seconds**

Options :

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

Solution :
The correct answer is **option 1** i.e. **70 seconds**

Total number of problems = 60

Total time for test = 1 hour = 60 min

Remaining questions = 60 - 30 = 30

Remaining time = 60 - 25 = 35 min = 35 × 60 sec

Rate of time required to solve remaining problems = 30×60/30 = 70 sec

Question 47 :
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?

Difficulty : Moderate **Average Time : 46 Seconds**

Options :

48 km/h

2. 50 km/h
3. 45 km/h
4. 60 km/h

Solution :

The correct answer is **option 1** i.e. **48 km/h**

Avg. speed of car = (2 × 40 × 60)/(40 + 60)

= 48 km/hr

Question 48 :

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?

Difficulty : Moderate **Average Time : 45 Seconds**

Options :

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

Solution :

The correct answer is **option 3** i.e. **6.25**

Target = 282 runs

Runs upto 10 overs = 3.2 × 10 = 32 runs

Required runs = 282 - 32 = 250

Required run rate = 250/40 = 6.25

Question 49 :

An army of 12000 consists of Europians and Indians. The average height Of European if 5ft 10 inches and that of an Indian is 5ft 9inches and that of the whole army if 5 ft 39/4 inches. Then the number of Indians in the army is?

Difficulty : Moderate **Average Time : 43 Seconds**

Options :

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

Solution :

The correct answer is option 1

Let the no. of Indians in the army = x

No. of Europians in the army = 12000 - x

ATQ

$(12000 - x)(5 + 10/12) + x(5+9/12) = 12000(5 + 59/(4\times12))$

$70000 - 35x/6 + 23x/4 = 69750$

$70000 - 35x/6 +23x/4 = 69750$

$250 = x/12$

$x = 3000$

Question 50 :

A sells a watch to B and makes a loss of 12%. B makes a profit of 25/2% 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?

Difficulty : Moderate **Average Time : 49 Seconds**

Options :

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

Solution :

The correct answer is **option 1** i.e. **1% loss**

Let A has a watch of Rs 100

Now,

Clearly, if A sells watch at Rs 99, he would have a net 1% loss

Question 51 :

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.

Difficulty : Moderate **Average Time : 47 Seconds**

Options :

1. 16
2. 14
3. 13
4. 15

Solution :

The correct answer is option 2

Three number are in the ratio 3 : 2 : 5

Three numbers are 3x, 2x, 5x

Now,

$(3x)^2 + (2x)^2 + (5x)^2 = 1862$

$9x^2 + 4x^2 + 25x^2 = 1862$

$38x^2 = 1862$

$x^2 = 49$

$x = 7$

Middle number = $2x = 14$

Question 52 :

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?

Difficulty : Moderate

Average Time : 48 Seconds

Options :

1. 7 : 13
2. 11 : 57
3. 23 : 37
4. 1 : 3

Solution :

The correct answer is **option 1** i.e. **7 : 13**

Ratio of acid and water in new mixture

= (2/5 × 1 + 1/3 × 3)/(3/5 × 1 + 2/3 × 3)

= (7/5)/(13/5)

= 7/13

Question 53 :

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

Difficulty : Moderate

Average Time : 38 Seconds

Options :

1. 33 : 4
2. 4 : 33
3. 3 : 43
4. 1 : 123

Solution :

The correct answer is **option 1** i.e. **33 : 4**

TSA of sphere = TSA of hemisphere

$4x^2 = 3y^2$

x/y = 3/2

Volume of sphere = $(4/3\ x^3)/(2/3\ y^3) = 2(x/y)^3 = 2(3/2)^3 = 33/4$

Required ratio = 33 : 4

Question 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:

Difficulty : Moderate **Average Time : 47 Seconds**

Options :

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

Solution :

The correct answer is **option 2** i.e. **48**

Ratio of side of triangle = 1/2 : 1/3 : 1/4 = 6 : 4 : 3

Perimeter of triangle = 104 cm

6x + 4x + 3x = 104 cm

13x = 104

x = 8

Hence,

Longest side length = 6 × 8 = 48 cm

Question 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 m2 in 5 days, Painter B can paint 250 m2 in 2 days. If A and B work together, they will finish the job in ?

Difficulty : Moderate **Average Time : 62 Seconds**

Options :

1. 6 days
2. 208/33 days
3. 241/33 days

8 days

Solution :

The correct answer is option 2

A paints 200/5 = 40 m^2/day

B paints 250/2 = 125 m^2/day

Area to be painted = 2(25+12)10 + 25 × 12 = 1040 m^2

Together, A and B can finish the job in 1040/(40+125) - 1040/165 = 208/33 days

Question 56 :

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

Difficulty : Moderate

Average Time : 47 Seconds

Options :

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

Solution :

The correct answer is **option 3** i.e. **2880 cu.cm**

Area of trapezium = 1/2 (25 + 11)16 = 288 cm^2

Volume of prism = area of trapezium × height = 288 × 10 = 2880 cm^3

Question 57 :

The external and the internal radii of a hollow 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 orignal cylinder, then the radius of the solid cylinder is?

Difficulty : Moderate

Average Time : 46 Seconds

Options :

1. 6 cm
2. 6.5 cm

7 cm

4. 7.25 cm

Solution :

The correct answer is **option 1** i.e. **6 cm**

Volume of hollow cylinder = Volume of solid cylinder

$[(6.75)^2 - (5.25)^2] \times 15 = r^2 \times 15/2$

$[(27/4)^2 - (21/4)^2] \times 15 = r^2 \times 15/2$

$[729/16 - 441/16] \times 2 = r^2$

$[288/16] \times 2 = r^2$

$r^2 = 36$

$r = 6$ cm

Question 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:

Difficulty : Moderate | **Average Time : 63 Seconds**

Options :

1. 50 metres
2. 100 metres
3. 150 metres
4. 250 metres

Solution :

The correct answer is **option 2** i.e. **100 metres**

Cost of surrounding land at Rs. 7.5/m = Rs 6000

Perimeter of land = 6000/7.5 = 800 m

Let, length and breadth are l and b respectively.

Also, l : b = 5 : 3

So, l = 5x and b = 3x,

So,

2(l + h) = 800

2(5x + 3x) = 800

x = 50

Hence,

l - b = 5x - 3x = 2x = 2 × 50 = 100 m

Question 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 = 22/7)

Difficulty : Moderate **Average Time : 59 Seconds**

Options :

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

Solution :

The correct answer is **option 1** i.e. **14 : 11**

Side of square = Diameter of circle

Let, side of square is x and radius of circle is r

x = 2r

x/r = 2

Area of square/Area of circle = $x^2/r^2 = (x/r)^2 \times 7/22 = 2^2 \times 7/22 = 14/11$

Required ratio = 14 : 11

Question 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 largest in shape of:

Difficulty : Moderate

Average Time : 51 Seconds

Options :

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

Solution :

The correct answer is **option 1** i.e. **Circle**

Case I:

Perimeter of Equilateral triangle = 132 cm

$3x = 132$

$x = 44$

Area of equilateral triangle = $3/4\ (44)^2 = 837.32\ cm^2$

Case II:

Perimeter of square = 132 cm

$4x = 132$

$x = 33$ cm

Area of square = $x^2 = 33^2 = 1089\ cm^2$

Case III:

Perimeter of circle = 132 cm

$2r = 132$

$2 \times 22/7 \times r = 132$

$r = 21$ cm

Area of circle = $r^2 = 22/7 \times 21^2 = 1386\ cm^2$

Hence, area will be largest in shape of Circle.

Question 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

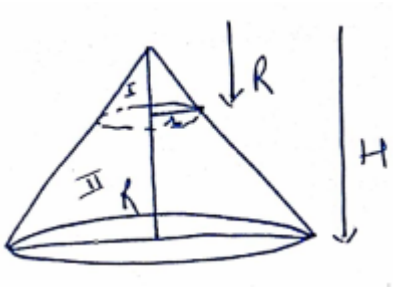
Difficulty : Moderate **Average Time : 81 Seconds**

Options :

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

Solution :

The correct answer is option 3



R = 2l

H = 2h

R/r = H/h = 2

Volume of small cone/volume of big cone = $(1/3\ r^2h)/(1/3\ r^2H)$

$=(r/R)^2 \times (h/H) = (1/2)^2 \times 1/2 = 1/8$

Vol. of part I/Vol. of part II = 1/8-1 = 1/7

Required ratio 1 : 7

Question 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:

Difficulty : Moderate **Average Time : 55 Seconds**

Options :

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

Solution :

The correct answer is **option 4** i.e. **5 , 10**

Given:

$S_1/S_2 = 1/2$ and $Q_1/Q_2 = 3/4$

Now,

$Q_1/Q_2 = 3/4$

$(180 - 360/S_1)/(180 - 360/S_2) = 3/4$

$(1 - 2/S_1)/(1 - 2/S_2) = 3/4$

$4 - 8/S_1 = 3 - 6/S_2$

$1 = 8/S_1 - 6/S_2$

$1 = 8/S_1 - 6/2S_1$ [Since $S_2 = 2S_1$]

$S_1 = 5$

And

$S_2 = 2S_1 = 10$

Question 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:

Difficulty : Moderate | **Average Time : 75 Seconds**

Options :

1. 305 : 100
2. 325 : 100

365 : 100

4. 425 : 100

Solution :

The correct answer is **option 3** i.e. **365 : 100**

Suppose the length of equal sides of the Isoceles triangle = 4a

So, third side = 4a/2 = 2a

Perimeter of Isoceles triangle = Perimeter of equilateral triangle = 4a + 4a + 2a = 10a

So,

Side of equilateral triangle = 10a/3

Now,

Height of Isoceles triangle

$h = [(4x)^2 - (a)^2] = [16a^2 - a^2] = 15\ a$

And

Area of Isoceles triangle = $[1/2 \times 2a \times 15\ a] = 15\ a^2$

And

Area equilateral triangle = $3/4 \times 10/3 \times 10/3 \times a^2 = 253/9\ a^2$

Ratio of areas = $(15\ a^2) : (25/9 \times 3a^2) = 365 : 100$

Question 64 :

A 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

Difficulty : Moderate | **Average Time : 84 Seconds**

Options :

1. 6 cm and 12 cm
2. 4 cm and 8 cm
3. 3 cm and 6 cm

2 cm and 4 cm

Solution :

The correct answer is option 3

$r_2 = 2r_1$

R = 18/2 = 9 cm

Volume of cylinder = Vol. of two spheres

$R^2h = 4/3 (r_1^3 + r_2^3)$

$\times 9^2 \times 4 = 4/3 [r_1^3 + (2r_1)^3]$

$9^2 \times 4 = 4/3 \times 9r_1^3$

$r_1^3 = 27$

$r_1 = 3$

$r_2 = 6$

Question 65 :

The whole surface area of a pyramid whose base is a regular polygon is 340 cm2 and area of its base is 100 cm2 . Area of each lateral face is 30 cm2 . Then the number of lateral faces is ?

Difficulty : Moderate | **Average Time : 61 Seconds**

Options :

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

Solution :

The correct answer is **option 1** i.e. **8**

Let the no. of lateral faces = n

Now, whole surface area of pyramid = base area + n lateral surface area

340 = n × 30 + 100

n = 8

Question 66 :

If P = 99, then the value of P(P2 + 3P + 3) is?

Difficulty : Moderate

Average Time : 37 Seconds

Options :

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

Solution :

The correct answer is **option 2** i.e. **999999**

Given: P = 99

Now,

$P(P^2 + 3P + 3)$

$= P^3 + 3P^2 + 3P$

$= P^3 + 3P^2 + 3P + 1 - 1$

$= (P + 1)^3 - 1$

$= (99 + 1)^3 - 1$

$= (100)^3 - 1$

= 999999

Question 67 :

If x + 1/x = c + 1/c then the value of x?

Difficulty : Moderate

Average Time : 44 Seconds

Options :

1. c, 1/c
2. c, c^2

c, 2c

4. 0, 1

Solution :

The correct answer is **option 2** i.e. **c, 1/c**

$x + 1/x = c + 1/c$

On comparing both the sides

$x = c$

$x = 1/c$

Question 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:

Difficulty : Moderate **Average Time : 41 Seconds**

Options :

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

Solution :

The correct answer is **option 3** i.e. **189**

Let the two number be a and b

$a^2 + b^2 = 41$

$a + b = 9$

So,

$(a + b)^2 = a^2 + b^2 + 2ab$

$81 = 41 + 2ab$

$ab = 20$

Now,

$a^3 + b^3 = (a + b)[(a + b)^2 - 3ab]$

$= 9(9^2 - 3 \times 20)$

$= 9(81 - 60) = 189$

Question 69 :

A complete factorisation of x4 + 64 is:

Difficulty : Moderate **Average Time : 51 Seconds**

Options :

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

Solution :

The correct answer is **option 4** i.e. **$(x^2 + 4x + 8)(x^2 - 4x + 8)$**

$x^4 + 64$

Adding and subtracting $16x^2$, we get,

$= x^4 + 16x^2 + 64 - 16x^2$

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

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

Question 70 :

If a + b = 1, then a4 + b4 - a3 - b3 - 2a2b2 + ab is equal to:

Difficulty : Moderate **Average Time : 59 Seconds**

Options :

1. 1
2. 2
3. 4
4. 0

Solution :

The correct answer is **option 4** i.e. **0**

a + b = 1

Let a = 0, b = 1

Putting the value in equation

$a^4 + b^4 - a^3 - b^3 - 2a^2b^2 + ab$

= 0 + 1 - 0 - 1 - 0 + 0 = 0

Question 71 :

If x2 + y2 + 6x + 5 = 4(x - y) then x - y is:

Difficulty : Moderate **Average Time : 42 Seconds**

Options :

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

Solution :

The correct answer is **Option 1** i.e. **1**

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

$x^2 + 2x + 1 + y^2 + 4y + 4 = 0$

$(x + 1)^2 + (y + 2)^2 = 0$

x = -1 and y = -2

Hence,

x - y = -1 - (-2) = 1

Question 72 :

If a = 299, b = 298, c = 297 then the value of 2a3 + 2b3 + 2c3 - 6abc is:

Difficulty : Moderate **Average Time : 49 Seconds**

Options :

1. 5154
2. 5267
3. 5364
4. 5456

Solution :

The correct answer is **Option 3** i.e. **5364**

a = 299, b = 298, c = 297

$2a^3 + 2b^3 + 2c^3 - 6abc$

$= 2(a^3 + b^3 + c^3 - 3abc)$

$= 2[(a + b + c) \times 1/2((a - b)^2 + (b - c)^2 + (c - a)^2)]$

$= 2[(299 + 298 + 297) \times 1/2(1^2 + 1^2 + 4)]$

$= 2[894 \times 1/2 \times 6]$

$= 5364$

Question 73 :

If x + 1/x = 3 the value of x18 + x12 + x6 + 1 is

Difficulty : Moderate

Average Time : 47 Seconds

Options :

1. 0
2. 1
3. 2
4. 3

Solution :

The correct answer is **option 1** i.e. **0**

x + 1/x = 3

cubing both sides, we get

$x^3 + 1/x^3 = 0$

$x^6 = -1$

Now,

$x^{18} + x^{12} + x^6 + 1$

$= (x^6)^3 + (x^6)^2 + x^6 + 1$

$= -1 + 1 - 1 + 1$

$= 0$

Question 74 :

If x = 1 + 2 + 3 , then find the value of 2x4 - 8x3 _ 8x2 + 32x.

Difficulty : Moderate

Average Time : 57 Seconds

Options :

1. 24
2. 38
3. 55
4. 16

Solution :

The correct answer is **Option 4** i.e. **16**

x = 1 + 2 + 3

x - 1 = 2 + 3

Squaring both sides,

$x^2 - 2x + 1 = 5 + 26$

$x^2 - 2x - 4 = 26$ .....(1)

Squaring both sides,

$x^4 + 4x^2 + 16 - 4x^3 + 16x - 8x^2 = 24$

$x^4 - 4x^3 - 4x^2 + 16x = 8$

$2x^4 - 8x^3 - 8x^2 + 32x = 16$

Question 75 :

If 2r = h + (r2 + h2) then the ratio r : h (r 0) is:

Difficulty : Moderate

Average Time : 55 Seconds

Options :

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

Solution :

The correct answer is **option 3** i.e. **4 : 3**

$2r = h + (r^2 + h^2)$

$(2r - h)^2 = r^2 + h^2$

$4r^2 - 4rh + h^2 = r^2 + h^2$

$3r^2 = 4rh$

$r/h = 4/3$

Question 76 :

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

Difficulty : Moderate

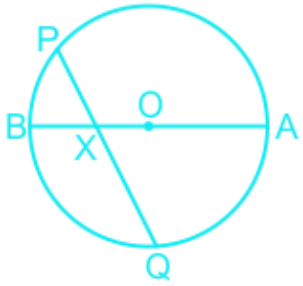
Average Time : 64 Seconds

Options :

1. 22 cm
2. 32 cm
3. 23 cm
4. 33 cm

Solution :

The correct answer is **option 3** i.e. **23 cm**



Side of triangle = 6 cm

Length of the Median = 3/2 × 6 = 33 cm

Hence,

AG = 2/3 × 33 = 23 cm

Question 77 :

PQ is a tangent to the circle at point T. If TR = TS where R and S are points on the circle and RST = 65°, the PTS = ?

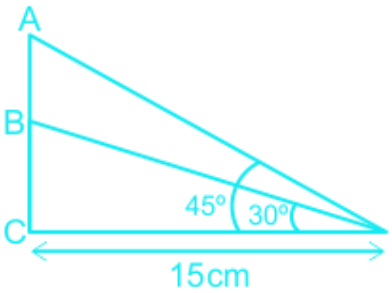
Difficulty : Moderate **Average Time : 50 Seconds**

Options :

1. 65°
2. 130°
3. 115°
4. 55°

Solution :

The correct answer is **option 3** i.e. **115°**



Here, TR = TS

So, SRT = RST = 65°

And

RTS = 180° - (65° + 65°) = 180° - 130° = 50°

Now,

RTP = SRT = 65°

So,

PTS = 50° + 65° = 115°

Question 78 :

In ABC, AC = BC and ABC = 50°, the side BC is produced to D so that BC = CD then the value of BAD is:

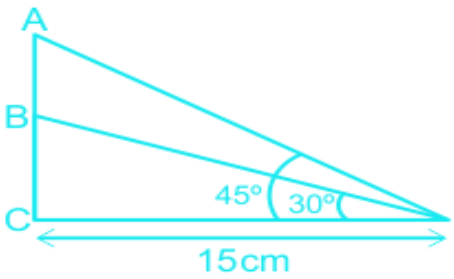
Difficulty : Moderate **Average Time : 56 Seconds**

Options :

1. 80°
2. 40°
3. 90°
4. 50°

Solution :

The correct answer is **option 3** i.e. **90°**



Now, In ABC:

50° + x + 50° = 180°

x = 80°

ACD = 180° - x = 180° - 80° = 100°

In ACD:

100° + y + y = 180°

y = 40°

Hence,

BAD = 50° + 40° = 90°

Question 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:

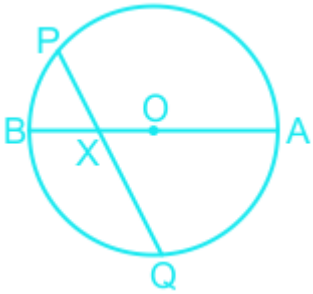
Difficulty : Moderate **Average Time : 67 Seconds**

Options :

1. 213 cm
2. 53 cm
3. 46 cm
4. 65 cm

Solution :

The correct answer is **option 3** i.e. **46 cm**



Let OX = a

BX = 5 - a

AX = 5 + a

Now,

AX/BX = 3/2

(5 + a)/(5 - a) = 3/2

10 + 2a = 15 - 3a

5a = 5

a = 1 cm

Hence,

BX = 4 and AX = 6

In triangle PXO:

PX = [PO^2 - OX^2] = [5^2 - 1^2] = 26 cm

So,

PQ = 2 × PX = 46 cm

Question 80 :

ABC is a triangle, PQ is line segment intersecting AB at P and AC at Q and PQ II BC. AP : BP = 3 : 5 and length of PQ is 18 cm. The length of BC is:

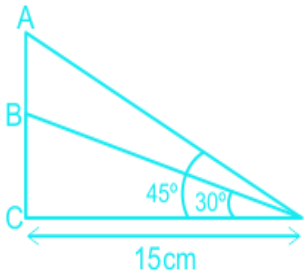
Difficulty : Moderate **Average Time : 73 Seconds**

Options :

1. 28 cm
2. 48 cm
3. 84 cm
4. 42 cm

Solution :

The correct answer is **option 2** i.e. **48 cm**



AP/BP = 3/5 and PQ = 18 cm

AP/AB = 3/8

Since PQ II BC, triangles APQ and ABC are similar triangles.

So,

AP/AB = PQ/BC

3/8 = 18/BC

BC = 48 cm

Question 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:

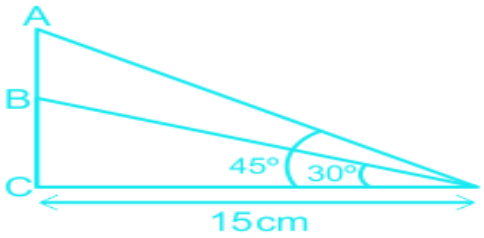
Difficulty : Moderate **Average Time : 60 Seconds**

Options :

1. 12 cm
2. 6 cm
3. 1 cm
4. 2 cm

Solution :

The correct answer is **option 4** i.e. **2 cm**



AD = 4 cm

BC = 8 cm

Since, M and N are midpoints:

We know that, the line segment joining the midpoints of the diagonals of the trapezium is parallel to the parallel sides and equal to half their difference.

So,

MN = (BC - AD)/2 = (8 - 4)/2 = 4/2 = 2 cm

Question 82 :

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

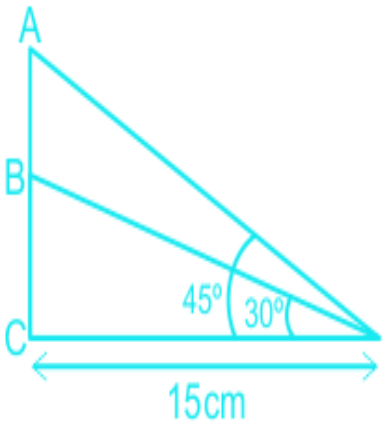
Difficulty : Moderate **Average Time : 58 Seconds**

Options :

1. 70°
2. 110°
3. 80°
4. 55°

Solution :

The correct answer is option 1



In ABC:

40 + x + x = 180°

x = 70°

PBD = OBC = 1/2 (180 - 70) = 55°

In OBC:

BOC + OBC + OCB = 180°

BOC + 110° = 180°

BOC = 70°

Question 83 :

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

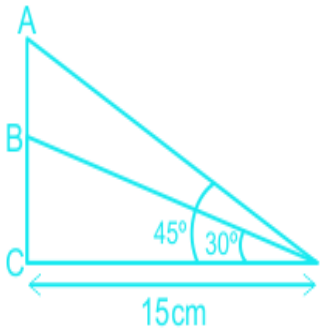
Difficulty : Moderate **Average Time : 63 Seconds**

Options :

1. 23 cm
2. 32 cm
3. 43 cm
4. 3 cm

Solution :

The correct answer is **option 1** i.e. **23 cm**



Side of equilateral triangle = 6 cm

Median of equilateral triangle = 3/2 × 6 = 33 cm

Hence,

Radius of circle, AO = 2/3 × 33 = 23 cm

Question 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 APB is:

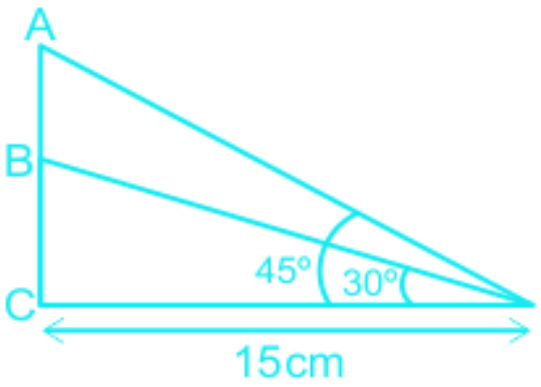
Difficulty : Moderate **Average Time : 57 Seconds**

Options :

1. 30°
2. 45°
3. 60°
4. 90°

Solution :

The correct answer is **Option 3** i.e. **60**

Application
Here we draw a diagram: 

Now, Since CD = OC = radius So, âˆ†ODC is an equilateral triangle OCD = ODC = COD = 60º We know In a circle, the angle at the center which is formed by the same arc is twice the angle at the circumference. So, CAD = 60º/2 = 30º
According to circle rule: AD is a perpendicular to BD. So, ADB = 90º = ADP
Hence, From the triangle rule: Sum of all angle = 180º So, PAD + ADP + APD = 180º 30º + 90º + APD = 180º APD = 180º - 120º APD = 60º APB = 60º

Question 85 :

Two chords AB and CD of a circle with centre O intersect at P. If APC = 40°. Then the value of AOC + BOD is?

Difficulty : Moderate

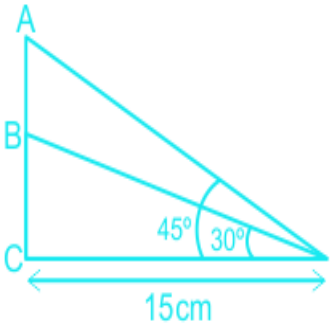
Average Time : 89 Seconds

Options :

1. 50°
2. 60°
3. 80°
4. 120°

Solution :

The correct answer is **option 3** i.e. **80°**



APC = 40°

So, APD = BPC = 140°

Now,

AOC + BOD

= 2ABC + 2BCD

= 2(ABC + BCD)

= 2(180° - BPC)

= 2(180° - 140°) = 80°

Question 86 :

If x tan 60° + cos 45° = sec 45° then the value of x2 + 1 is?

Difficulty : Moderate

Average Time : 50 Seconds

Options :

6/7

2. 7/6
3. 5/6
4. 6/5

Solution :

The correct answer is **option 2** i.e **7/6**

x tan 60° + cos 45° = sec 45°

x3 + 1/2 = 2

3x = 2 - 1/2 = 1/2

x = 1/6

Hence,

$x^2 + 1 = (1/6)^2 + 1 = 7/6$

Question 87 :

x and y be two acute angles, x + y 90° and sin(2x - 20°) = cos(2y + 20°), the value of tan(x + y) is:

Difficulty : Moderate | **Average Time : 57 Seconds**

Options :

1. 3
2. 1/3
3. 1
4. 2 + 2

Solution :

The correct answer is **Option 3** i.e. **1.**

sin(2x - 20°) = cos(2y + 20°)

sin(2x - 20°) = sin[90° - (2x - 20°)]

2x - 20 = 90° - (2y + 20°)

2x + 2y = 90°

$x + y = 45°$

Hence,

$\tan(x + y) = \tan 45° = 1$

Question 88 :

If a2sec2x - b2tan2x = c2 then, find the the value of sec2x + tan2x. (b2 a2) :

Difficulty : Moderate **Average Time : 54 Seconds**

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. $(b^2 - a^2)/(b^2 + a^2 + 2c^2)$

Solution :

The correct answer is **Option 2** i.e. **$(b^2 + a^2 - 2c^2)/(b^2 - a^2)$.**

$a^2\sec^2x - b^2\tan^2x = c^2$ .....(1)

we know,

$\sec^2x - \tan^2x = 1$

$\tan^2x = \sec^2x - 1$ .....(2)

From (1) and (2), we get

$\sec^2x = (c^2 - b^2)/(a^2 - b^2)$

$\tan^2x = (c^2 - a^2)/(a^2 - b^2)$

$\sec^2x + \tan^2x = (c^2 - b^2 + c^2 - a^2)/(a^2 - b^2) = (b^2 + a^2 - 2c^2)/(b^2 - a^2)$

Question 89 :

(1 + sec 20° + cot 70°)(1 - cosec 20° + tan70°) is equal to:

Difficulty : Moderate **Average Time : 95 Seconds**

Options :

1. 0

1

3. 2

4. 3

Solution :

The correct answer is **Option 3** i.e **2**

(1 + sec 20° + cot 70°)(1 - cosec 20° + tan 70°)

= (1 + sec 20° + tan 20°)(1 - cosec 20° + cot 20°)

Let 20° = x

= (1 + sec x + tan x)(1 - cosec x + cot x)

= (1 + 1/cos x + sin x/cos x)(1 - 1/sin x + cos x/sin x)

= [(sin x + cos x + 1)/cos x] [(sin x + cos x - 1)/sin x]

= $[(\sin x + \cos x)^2 - 1^2]/\cos x \sin x$

= (1 + 2sin x cos x - 1)/cos x sin x

= 2

Question 90 :

If tan4 + tan2 = 1 then the value of cos4 + cos2 is?

Difficulty : Moderate **Average Time : 56 Seconds**

Options :

1. 2

2. 0

3. 1

4. -1

Solution :

The correct answer is **option 3** i.e. **1**

$\tan^4 + \tan^2 = 1$

$\tan^2(\tan^2 + 1) = 1$

$\tan^2 \sec^2 = 1$

$(\sec^2 - 1)(\sec^2) = 1$

$\sec^4 - \sec^2 = 1$

$\cos^4 + \cos^2 = 1$

Question 91 :

The value of 8(sin6 + cos6) - 12(sin4 + cos4) is equal to:

Difficulty : Moderate **Average Time : 72 Seconds**

Options :

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

Solution :

The correct answer is **Option 3** i.e. **-4**

$8(\sin^6 + \cos^6) - 12(\sin^4 + \cos^4)$

Put $= 0°$

We get,

$= 8(\sin^6 0 + \cos^6 0) - 12(\sin^4 0 + \cos^4 0)$

$= 8(0 + 1) - 12(0 + 1)$

$= -4$

Question 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°. After 15 sec flight, its angle of elevation is changed to 30°. The speed of the aeroplane (taking 3 = 1.732) is

Difficulty : Moderate **Average Time : 53 Seconds**

Options :

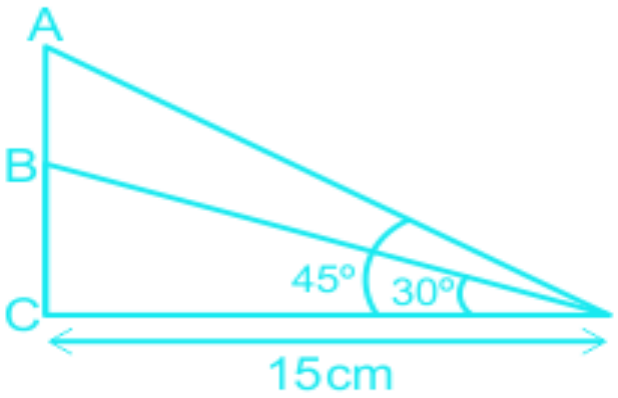
1. 230.63 m/sec

230.93 m/sec

3. 235.85 m/sec
4. 236.25 m/sec

Solution :

The correct answer is option 2



tan 60 = 3/BC

BC = 3/3 = 3

tan 30 = 3/AC

AC = 33

AB = AC - BC = 33 - 3 = 23

Speed of airplane = 23×1000/15 = 230.93 m/s

Question 93 :

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

Difficulty : Moderate

Average Time : 50 Seconds

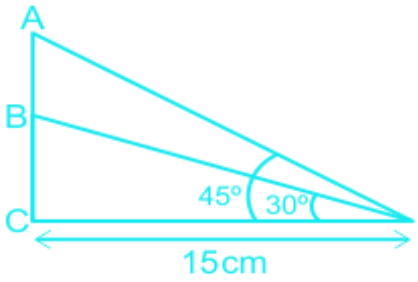
Options :

1. 60(3+1) m
2. 30(3-1) m
3. 30(3+1) m

60(3-1) m

Solution :

The correct answer is option 3



tan 45 = h/x

h = x

tan 30 = h/x+60

1/3 = h/hx+60

h = 60/3-1 = 30(3+1)m

Question 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 and (>). The height of the tower is h unit. A possible distance (in the same unit) between the points is

Difficulty : Moderate

Average Time : 55 Seconds

Options :

1. h(cot - cot)/cos(+)
2. h(cot - cot)
3. h(tan - tan)/tan tan
4. h(cot + cot)

Solution :

The correct answer is option 4

AB = h cot

BC = h cot

AC = AB+ BC = h(cot + cot)

Question 95 :

The angle of elevation of the top of an unfinished pillar at a point 150 metres from its base is 30°. The height (in metres) that the pillar must be raised so that its angle of elevation at the same point may be 45°, is (takeing 3 = 1.732)

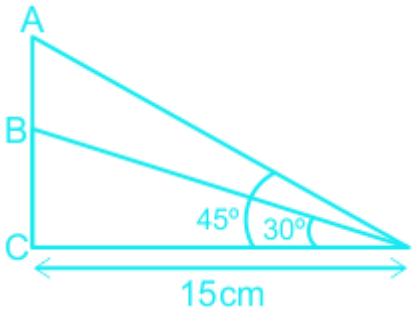
Difficulty : Moderate **Average Time : 52 Seconds**

Options :

1. 63.4
2. 86.6
3. 126.8
4. 173.2

Solution :

The correct answer is option 1



BC = 150 tan 30 = 503 = 86.6

AC = 150 tan45 = 150

AB = AC - BC = 150 - 86.6 = 63.4 m

Question 96 :

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

Difficulty : Moderate **Average Time : 40 Seconds**

Options :

1. 7500

5600

3. 6500

4. 5700

Solution :

The correct answer is option 3

Total sales of english newspaper in all localities = 7500+9000+9500+7000+6500 = 39500

Total sales of Hindi newspaper in all localities = 5500+8500+4500+950+5000 = 33000

Difference between the total sale of English and Hindi newspapers = 39500-33000 = 6500

Question 97 :

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

Difficulty : Moderate **Average Time : 38 Seconds**

Options :

1. 2000

2. 1300

3. 2100

4. 2200

Solution :

The correct answer is option 2

Total sales of english newspaper in all localities = 7500+9000+9500+7000+6500 = 39500

Total sales of Hindi newspaper in all localities =5500+8500+4500+9500+5000 = 33000

Average of sales of Hindi newspaper = 33000/5 = 6600

Average of difference of sales of hindi and English newspaper in all localities = 7900 - 6600 = 1300

Question 98 :

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

Difficulty : Moderate **Average Time : 41 Seconds**

Options :

4.5

2. 5.75
3. 6.36
4. 7.82

Solution :

The correct answer is option 3

Ratio of sales of English and Hindi newspaper in locality A = 7500/550 = 75/55 = 1.37 .....(1)

Ratio of sales of English and Hindi newspaper in locality B = 9000/8500 = 90/85 = 1.06 .....(2)

Ratio of sales of English and Hindi newspaper in locality C = 9500/4500 = 2.11 .....(3)

Ratio of sales of English and Hindi newspaper in locality D = 7000/9500 = 0.74 .....(4)

Ratio of sales of English and Hindi newspaper in locality E = 650/5000 = 1.30 .....(5)

Adding (1), (2), (3), (4) and (5), we get

=1.3 + 1.06 + 2.11 + 0.74 + 1.30 = 6.36

Question 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 ?

Difficulty : Moderate | **Average Time : 51 Seconds**

Options :

1. 10 : 9
2. 9 : 10
3. 11 : 9
4. 9 : 11

Solution :

The correct answer is option 1

Average no. of sales of English newspapers in localities B and D together = (9000+9500+6500)/3 = 25000/3 .....(1)

Average no. of sales of Hindi newspapers in localities A and D = (5500+9500)/2 = 15000/2 = 7500 .....(2)

Dividing 1 and 2

=25000/3×7500 = 250/225 = 10/9

Question 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 ?

Difficulty : Moderate

Average Time : 42 Seconds

Options :

1. 34 : 43
2. 40 : 33
3. 33 : 40
4. 43 : 33

Solution :

The correct answer is option 2

Average no. of sale of English newspaper in localities B and D together = (9000+7000)/2 = 16000/2 = 8000 .....(1)

Total sale of Hindi newspaper in all localities = 33000

Average sales of Hindi newspaper in all localities = 33000/5 = 6600 .....(2)

Dividing 1 and 2

= 8000/6600 = 40 : 33

Ssc Cgl Tier II Previous Year Question Paper Analysis

The analysis of Ssc Cgl Tier II Previous Year Question Paper held on 2016-11-30 in the Morning exam is as follows:

1. 100 questions were moderate.
2. The safe score is 150 marks.
3. 100 questions were asked from Quantitative Aptitude and 100 questions were asked from Quantitative Aptitude
4. 0 questions should have been skipped if you were short of time.

Ssc Cgl Tier II Previous Year Question Paper Topic

Wise Weightage

Quantitative Aptitude

1. Simplification - 1
2. Average - 6
3. Percentage - 5
4. Data Interpretation - 1
5. Time And Work - 6
6. Time Speed And Distance - 4
7. Interest - 4
8. Ratios And Proportion - 8
9. Geometry - 15
10. Trigonometry - 10
11. Mensuration - 9
12. Algebra - 15
13. Number System - 6
14. Profit And Loss - 10

Ssc Cgl Tier II Previous Year Question Paper Tips and Tricks

1. Try to solve Ssc Cgl Tier II Previous Year Question Paper without taking any help from the solutions.
2. Ssc Cgl Tier II Previous Year Question Paper require proper usage of concept so firstly read the question thoroughly

and then use the right concept.

3. In case you're not able to solve the question in less than 30 seconds in the exam then you should skip the question and move to the next question.

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About Neetu Mam

Neetu Mam is primarily passionate for the English language and teaching from the last 20 years however for the Ssc Cgl Tier II Previous Year Question Paper. She has guided her team to provide the best explanation for the question.