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 2016-12-01 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 x2 + y2 + 2x + 1 = 0, then the value of x31 + y35 is

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

Options :

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

Solution :

The correct option is 1.

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

$x^2 + 2x + 1 + y^2 = 0$ {âˆ $(x + 1)^2 = x^2 + 2x + 1$}

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

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

$x + 1 = 0$ $y = 0$

$x = -1$ $y = 0$

$x^{31} + y35 = 1^{31} + 0^{35} = -1$

Question 2 :

If x = and y = , then the value of is

Difficulty : Moderate

Average Time : 45 Seconds

Options :

1. 
2. 
3. $63 \times \frac{825}{36} = \frac{5775}{4}$
4. 

Solution :

The correct option is 2.

x = $63 \times \frac{825}{36} = \frac{5775}{4}$ and y = $63 \times \frac{825}{36} = \frac{5775}{4}$

x + y = $63 \times \frac{825}{36} = \frac{5775}{4}$ + $63 \times \frac{825}{36} = \frac{5775}{4}$

x + y = $63 \times \frac{825}{36} = \frac{5775}{4}$

x + y = $63 \times \frac{825}{36} = \frac{5775}{4}$ = 3

x × y = $63 \times \frac{825}{36} = \frac{5775}{4}$ × $63 \times \frac{825}{36} = \frac{5775}{4}$ = 1

$(x + y)^2 = x^2 + y^2 + 2xy$ $(3)^2 = x^2 + y^2 + 2$

$x^2 + y^2 = 7$

$63 \times \frac{825}{36} = \frac{5775}{4}$ {substituting $x^2 + y^2 = 7$ and xy = 1

$63 \times \frac{825}{36} = \frac{5775}{4}$

=

Question 3 :

The Simplified value of is

Difficulty : Moderate

Average Time : 108 Seconds

Options :

1. $63 \times \frac{825}{36} = \frac{5775}{4}$
2. $63 \times \frac{825}{36} = \frac{5775}{4}$
3. $63 \times \frac{825}{36} = \frac{5775}{4}$
4. $63 \times \frac{825}{36} = \frac{5775}{4}$

Solution :

The correct option is 2.

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

$$= 63 \times \frac{825}{36} = \frac{5775}{4}$$

(âˆµ $x^2 + y^2$ 2xy = $(x\ \ y)^2$ and x^3 y^3 3xy(x y) = $(x\ \ y)^3$)

$$= 63 \times \frac{825}{36} = \frac{5775}{4}$$

$$= 63 \times \frac{825}{36} = \frac{5775}{4}$$

$$= 63 \times \frac{825}{36} = \frac{5775}{4}$$

Question 4 :

If a + b + c = 0 then the value of is

Difficulty : Moderate

Average Time : 80 Seconds

Options :

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

Solution :

The correct option is 1.

a + b + c = 0

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

taking LCM we get

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

$$= 63 \times \frac{825}{36} = \frac{5775}{4}$$

we know a + b + c = 0

$$63 \times \frac{825}{36} = \frac{5775}{4} = 0$$

Question 5 :

If a2 + b2 + c2 = 16, x2 + y2 + z2 = 25 and ax + by + cz = 20, then the value of

Difficulty : Moderate

Average Time : 52 Seconds

Options :

1. $63 \times \frac{825}{36} = \frac{5775}{4}$
2. 
3. $63 \times \frac{825}{36} = \frac{5775}{4}$

Solution :

The correct option is 3.

$a^2 + b^2 + c^2 = 16$, $x^2 + y^2 + z^2 = 25$ and $ax + by + cz = 20$

let $a = 0$, $b = 0$, $x = 0$, $y = 0$

we get

$0^2 + 0^2 + c^2 = 16$, $c^2 = 16$, $c = 4$

$0^2 + 0^2 + z^2 = 25$, $z^2 = 25$, $z = 5$

putting value of c and z

$0x + 0y + cz = 20$

satisfy the above equation

putting the values

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

Question 6 :

The value of x which satisfies the equation is

Difficulty : Moderate

Average Time : 75 Seconds

Options :

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

Solution :

The correct option is 2.

Question 7 :

If a + = – 2, then the value of a1000 + a1000 is

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

Options :

1. 2
2. 0
3. 1
4. 

Solution :

The correct option is 1.

a +  = – 2

let a = -1

–1 +  = –1 + –1 = –2

a = 1

$a^{1000} + a^{1000} (1)^{1000} + (1)^{1000} = 1 + 1 = 2$

Question 8 :

A chord of a circle is equal to its radius. The angle subtended by this chord at a point on the circumference is:

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

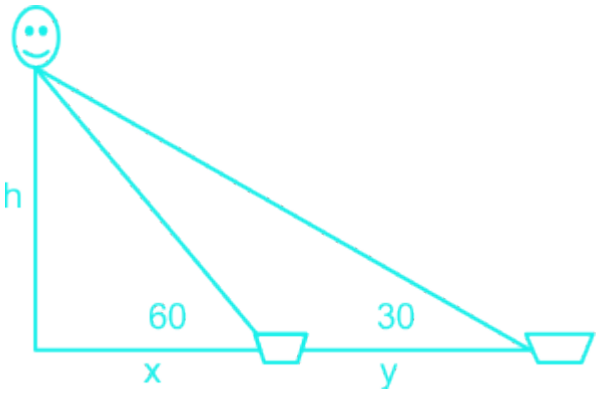
Options :

1. $80^{â~~}$
2. $60^{â~~}$
3. $30^{â~~}$
4. $90^{â~~}$

Solution :

The correct answer is **Option 3** i.e. **$30^{â~~}$**

Length of chord = Length of radius



Equilateral triangle is formed

Angle at the centre = 60°

Angle subtended by chord at centre = 2 × Angle subtented by chord at the circumferece of circle

Hence,

Angle subtented by chord at the circumferece of circle = 30°

Question 9 :

ABC is similar to DEF. If area of ABC is 9 sq.cm. and area of DEF is 16 sq.cm. and BC = 2.1 cm, then the length of EF will be:

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

Options :

1. 5.6 cm
2. 2.8 cm
3. 3.7 cm
4. 1.4 cm

Solution :

The correct answer is **Option 2** i.e. **2.8 cm**

If triangle are similar then:

Area of ABC : Area of DEF = $BC^2 : EF^2$

$9 : 16 = BC^2 : EF^2$

3 : 4 = BC : EF

EF = 4/3 × 2.1 = 2.8 cm

Comprehension :

The following pie-chart shows the monthly expenditure of a family on various items. If the family spends Rs. 825 on clothing, answer the question

Question 10 :

What percent of the total income does the family save

Difficulty : Moderate **Average Time : 74 Seconds**

Options :

1. 15%
2. 50%
3. 20%
4. 25%

Solution :

The correct option is 1.

Saving = 54º

Total income = 360º

$63 \times \frac{825}{36} = \frac{5775}{4} \times 100 = 15\%$

Question 11 :

A merchant marked the price of an article by increasing its production cost by 40%. Now he allows 20%discount and gets a profit of Rs. 48 after selling it. The production cost is

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

Options :

1. Rs. 320
2. Rs. 360

Rs. 400

4. Rs. 440

Solution :

The correct option is 3.

let the production cost(PC) be rs 100

marked price (MP) = 140% production cost { production cost = rs 100}

MP = rs 140

discount = 20%

discount = $63 \times \frac{825}{36} = \frac{5775}{4}$ × 140 {âˆµ discount = $63 \times \frac{825}{36} = \frac{5775}{4}$ × MP}

discount = rs 28

selling price (SP) = rs 112

profit = SP - PC = 112 -100 = 12

here Rs 12 is when PC = rs 100

now when profit = rs 48 { âˆµ 12 × 4 = 48}

PC = 4 × 100 = rs 400

Question 12 :

A shopkeeper allows 20% discount on his advertised price and to make a profit of 25% on his outlay. What is the advertised price (in Rs.) on which he gains Rs.6000?

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

Options :

1. 36000
2. 37500
3. 39000
4. 42500

Solution :

The correct option is 2.

let MP(marked price) = rs 100

discount = 20% of MP = rs 20

Selling price (SP) = rs 80

SP = 125% of CP = $63 \times \frac{825}{36} = \frac{5775}{4}$ × CP

80 = $63 \times \frac{825}{36} = \frac{5775}{4}$ × CP

CP = $63 \times \frac{825}{36} = \frac{5775}{4}$ × 80

CP = rs 64

gain = 80- 64 = rs16

now real gain = 6000

16 = 6000

1 = 375

MP = rs 100 = 100 × 375 = 37500

Question 13 :

Among 132 examineesof a certain school, the ratio of successful to unsuccessful students is 9 : 2, Had 4 more students passed, then the ratio of successful to unsuccessful students will be

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

Options :

1. 14 : 3
2. 14 : 5
3. 28 : 3
4. 28 : 5

Solution :

The correct option is 4.

the ratio of successful to unsuccessful students is 9 : 2

total number of examines = 132

successful students = $63 \times \frac{825}{36} = \frac{5775}{4}$ × 132 = 108

unsuccessful students = $\{63 \times \frac{825}{36} = \frac{5775}{4}\}$ × 132 = 24

had 4 more students passed

successful students = 108 + 4 = 112

unsuccessful students = 24 - 4 = 20

new ratio of successful to unsuccessful students is 112 : 20

28 : 5

Question 14 :

If = 3, then the value of equals

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

Options :

1. 90
2. 100
3. 110
4. 120

Solution :

The correct option is 3.

$63 \times \frac{825}{36} = \frac{5775}{4} = 3$

$63 \times \frac{825}{36} = \frac{5775}{4} - 2 = 3$

$63 \times \frac{825}{36} = \frac{5775}{4} = 5$ $\{\frac{63 \times 825}{36} = \frac{5775}{4} = k$ then $63 \times \frac{825}{36} = \frac{5775}{4} = k^3 = 3k\}$

$63 \times \frac{825}{36} = \frac{5775}{4} = 5^3 - 3 \times 5 = 125 - 15 = 110$

$63 \times \frac{825}{36} = \frac{5775}{4} = 110$

Question 15 :

If x4 + 2x3 + ax2 + bx + 9 is a perfect square, where a and b are positive real numbers, then the value of a and b are

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

Options :

1. a = 5, b = 6
2. a = 6, b = 7
3. a = 7, b = 6
4. a = 7, b = 8
5. None of these

Solution :

The correct answer is **Option 3 i.e. a = 7, b = 6**

Application
$(a + b + c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ca$
$(x^2 + x + 3)^2 = x^4 + x^2 + 9 + 2x^3 + 6x + 6x^2$
$= x^4 + 2x^3 + 7x^2 + 6x + 9$
On comparing with $x^4 + 2x^3 + ax^2 + bx + 9$
a = 7, b = 6

Question 16 :

If sec + tan = m(> 1), then the value of sin is (0º 90º)

Difficulty : Moderate **Average Time : 64 Seconds**

Options :

1. $63 \times \frac{825}{36} = \frac{5775}{4}$
2. $63 \times \frac{825}{36} = \frac{5775}{4}$
3.

$63 \times \frac{825}{36} = \frac{5775}{4}$

4. $63 \times \frac{825}{36} = \frac{5775}{4}$

Solution :

The correct option is 2.

sec + tan = m(> 1)

let = 45°

2 + 1 = m

m^2 = 3 + 22

m^2 1 = 3 + 22 1 = 2 + 22

m^2 + 1 = 3 + 22 + 1 = 2 + 22

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

Question 17 :

A man on the top of a tower, standing on the sea-shore, finds that a boat coming towards him takes 10 minutes for the angle of depression to change from 30º to 60º. How soon the boat reach the sea-shore ?

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

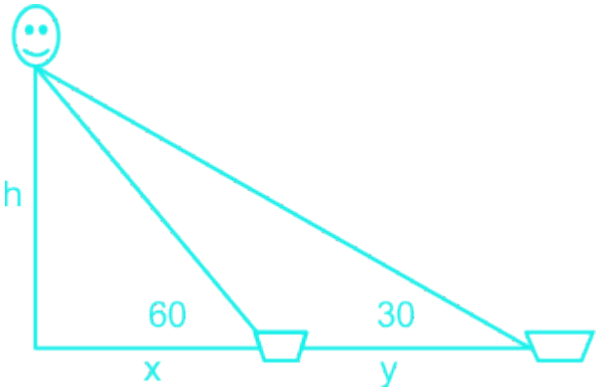
Options :

1. 5 minutes
2. 7 minutes
3. 10 minutes
4. 15 minutes

Solution :

The correct option is 1.

height of tower = h



$\tan 30° = 63 \times \frac{825}{36} = \frac{5775}{4}$

$\tan 60° = 63 \times \frac{825}{36} = \frac{5775}{4}$

$63 \times \frac{825}{36} = \frac{5775}{4} = x$

$63 \times \frac{825}{36} = \frac{5775}{4}$

h3 = x + y

$h3 = 63 \times \frac{825}{36} = \frac{5775}{4} + y$

$63 \times \frac{825}{36} = \frac{5775}{4} = y$

y = 2x

time taken to travel y distance = 10mins

time taken to travel x distance (half of y distance) = 5 mins

Question 18 :

The expression of is equal to

Difficulty : Moderate

Average Time : 73 Seconds

Options :

1. $63 \times \frac{825}{36} = \frac{5775}{4}$

$63 \times \frac{825}{36} = \frac{5775}{4}$

3. $63 \times \frac{825}{36} = \frac{5775}{4}$

4. $63 \times \frac{825}{36} = \frac{5775}{4}$

Solution :
The correct option is 1.

Comprehension :
The following pie-chart shows the monthly expenditure of a family on various items. If the family spends Rs. 825 on clothing, answer the question

Question 19 :
What is the total monthly income of the family ?

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

Options :

1. Rs. 8025
2. Rs. 8250
3. Rs. 8520
4. Rs. 8052

Solution :
The correct option is 2.

given 36°(clothing) = Rs.825

total income = 360° = 825 × 10 = Rs. 8250

Question 20 :
Let two chords AB and AC of the larger circle touch the smaller circle having the same center at X and Y. Then XY = ?

Difficulty : Moderate **Average Time : 35 Seconds**

Options :

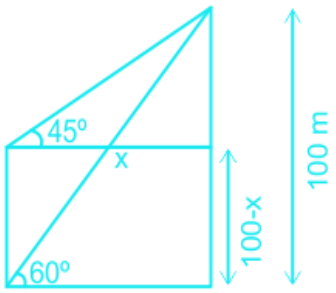
1. BC

BC/2

3. BC/3
4. BC/4

Solution :

The correct answer is **Option 2** i.e. **BC/2**

Application
 AX = AY = tangents from an exterior point AX = XB ; AY = YC XY is perpendicular to BC So, XY = BC/2

Question 21 :

If (a2 b2) sin + 2ab cos = a2 + b2, than tan

Difficulty : Moderate

Average Time : 50 Seconds

Options :

1. $63 \times \frac{825}{36} = \frac{5775}{4}$
2. $63 \times \frac{825}{36} = \frac{5775}{4}$
3. $63 \times \frac{825}{36} = \frac{5775}{4}$

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

Solution :

The correct option is 2.

$(a^2\ b^2)\sin\ + 2ab\cos\ = a^2 + b^2$

divide it by $a^2 + b^2$

we get

$63 \times \frac{825}{36} = \frac{5775}{4}$ = 1 (âˆµ $\sin^2\ + \cos^2\ = 1$)

here sin = $63 \times \frac{825}{36} = \frac{5775}{4}$

cos = $63 \times \frac{825}{36} = \frac{5775}{4}$

tan = $63 \times \frac{825}{36} = \frac{5775}{4}$

Question 22 :

Let G be the centroid of an equilateral triangle ABC where the perimeter of the triangle is 24 cm. Then find the length of AG.

Difficulty : Moderate **Average Time : 83 Seconds**

Options :

1. 23 cm
2. $63 \times \frac{825}{36} = \frac{5775}{4}$ cm
3. 83 cm
4. 43 cm

Solution :

The correct answer is **Option 2** i.e. $63 \times \frac{825}{36} = \frac{5775}{4}$ **cm**

Let 'a' be the side of ABC.

Perimeter = 3a = 24

a = 8

Height of the equilateral triangle = $63 \times \frac{825}{36} = \frac{5775}{4}$ a = $63 \times \frac{825}{36} = \frac{5775}{4} \times 8 = 43$

Centroid divides the height in 2 : 1

So,

Length of AG = $\frac{2}{3}$ height of equilateral traingle = $\frac{2}{3} \times 43 = 63 \times \frac{825}{36} = \frac{5775}{4}$ cm

Question 23 :

A and B are the centers of two circles with radii 11 cm and 6 cm respectively. A common tangent touches these circles at P & Q respectively. If AB =13 cm, then the length of PQ is:

Difficulty : Moderate **Average Time : 83 Seconds**

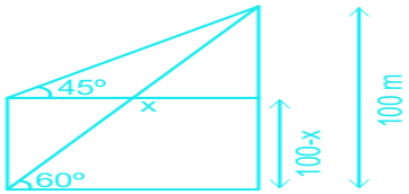
Options :

1. 13 cm
2. 17 cm
3. 8.5 cm
4. 12 cm

Solution :

The correct answer is **option 4** i.e. **12 cm**

Application



Here, AB = 13 cm.

PQ = $[(AB)^2 - (r_1 - r_2)^2]$

PQ = $[(13)^2 - (11 - 6)^2]$

PQ = [169 -25] = 144 = 12 cm.

Question 24 :

ABC is an isosceles triangle inscribed in a circle. If AB = AC = 125 cm and BC = 24 cm then radius of circle is:

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

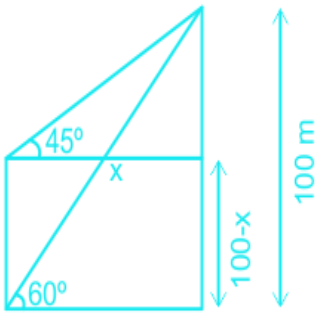
Options :

1. 10 cm
2. 15 cm
3. 12 cm
4. 14 cm

Solution :

The correct answer is **option 2** i.e. **15 cm**

Application



AD is perpendicular to BC:

Given, BC = 24 cm

BD = DC = 12 cm

OC = OA = Circum-radius = r cm

$AD = [AB^2 - BD^2]$

$AD = [(125)^2 - (12)^2]$

$AD = [144 \times 5 - 144]$

$AD = [144 \times 4] = 24$ cm.

In triangle OCD,

OD = (24 - r) cm.

$OC^2 = OD^2 + CD^2$

$r^2 = (24 - r)^2 + 12^2$

$r^2 = 576 - 48r + r^2 + 144$

$48r = 720$

$r = 720/48 = 15$ cm.

Question 25 :

ABC is an isosceles triangle where AB = AC which is circumscribed about a circle. If P is the point where the circle touches the side BC, then which of the following is true ?

Difficulty : Moderate

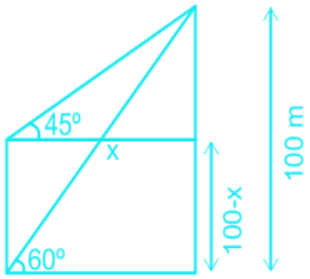
Average Time : 89 Seconds

Options :

1. BP = PC
2. BP > PC
3. BP PC
4. BP = PC
5. None of these

Solution :

The correct answer is **option 1** i.e **BP = PC**

Application
 Here given that = AB = AC AQ + BQ = AR + RC We know that: BQ = PB and PC = RC AQ + PB = AR + PC Also AQ = AR AR + PB = AR + PC BP = PC

Question 26 :

In ABC, D and E are the midpoints of AB and AC respectively, then the ratio of the areas of ADE and BCED is:

Difficulty : Moderate

Average Time : 76 Seconds

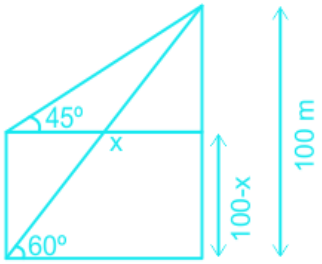
Options :

1. 1 : 2
2. 1 : 4
3. 2 : 3
4. 1 : 3
5. None of these

Solution :

The correct answer is **option 4** i.e. **1 : 3**

Application



As DE is perpendicular to BC and D and E are the midpoints of AB and AC

DE = 1/2 BC

(Area of ABC/Arean of ADE) = (BC^2/DE^2) = 4

Area of ADE = 1/4 × Area of ABC

And

Area of quadrilateral BCED = 3/4 × ABC

Required ratio = 1 : 3.

Question 27 :

O is the circumcentre of the isosceles ABC. Given that AB = AC = 17 cm and BC = 6 cm. The radius of the circle is:

Difficulty : Moderate

Average Time : 67 Seconds

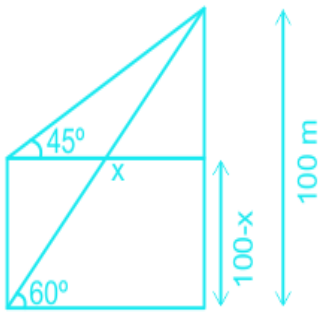
Options :

1. 3.015 cm
2. 3.205 cm
3. 3.025 cm
4. 3.125 cm
5. None of these

Solution :

The correct answer is **Option 4** i.e. **3.125 cm**

Application



AB = AC = 5 cm. (We have assumed to reach answer)

AD is perpendicular to BC.

BD = DC = 3 cm.

In triangle ADB,

$AD = AB^2 - BD^2$

$AD = 5^2 - 3^2$

AD = 25 - 9 = 16 = 4 cm.

Let, OA = OC = r cm.

OD = (4 – r) cm.

In triangle OCD:

$OC^2 = OD^2 + DC^2$

$r^2 = (4 - r)^2 + 3^2$

$r^2 = 16 + r^2 - 8r + 9$

8r = 25

r = 25/8 = 3.125 cm

Question 28 :

B1 is a point on the side AC of ABC and B1B is joined. Line is drawn through A parallel to B1B meeting BC at A1 and another line is drawn through C parallel to B1B meeting AB produced at C1. Then:

Difficulty : Moderate

Average Time : 121 Seconds

Options :

1. $63 \times \frac{825}{36} = \frac{5775}{4}$
2. $63 \times \frac{825}{36} = \frac{5775}{4}$
3. $63 \times \frac{825}{36} = \frac{5775}{4}$
4. $63 \times \frac{825}{36} = \frac{5775}{4}$

Solution :

The correct answer is **Option 2** i.e. $63 \times \frac{825}{36} = \frac{5775}{4}$

In AA_1C and BB_1C:

$BB_1 \parallel AA_1$

$BB_1/AA_1 = B_1C/AC$ --- (1)

In CC_1A and ABB_1:

$BB_1 \parallel CC_1$

$BB_1/CC_1 = AB_1/AC$

$BB_1/CC_1 = (AC - B_1C)/AC$

$BB_1/CC_1 = 1 - (B_1C/AC)$

From equation (1):

$BB_1/CC_1 = 1 - BB_1/AA_1$

$BB_1[1/CC_1 + 1/AA_1] = 1$

$1/CC_1 + 1/AA_1 = 1/BB_1$

Question 29 :

The value of the expression (1 + sec 22? + cot 68?)(1 cosec 22? + tan 68?) is

Difficulty : Moderate

Average Time : 87 Seconds

Options :

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

Solution :

The correct option is 4.

$(1 + \sec 22^{\circ} + \cot 68^{\circ})(1 \ \text{cosec}\ 22^{\circ} + \tan 68^{\circ})$

$(1 + \sec 22^{\circ} + \tan 22^{\circ})(1 \ \text{cosec}\ 22^{\circ} + \cot 22^{\circ})$

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

Question 30 :

If x sin3 + y cos3 = sin cos and x sin y cos = 0 , then the value of x2 + y2 equals

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

Options :

1. 1
2. 
3. $63 \times \frac{825}{36} = \frac{5775}{4}$
4. 2

Solution :

The correct option is 1.

$x \sin^3 + y \cos^3 = \sin \cos$ --> eq 1

$x \sin \; y \cos = 0$

$x \sin = y \cos$ --->eq2

substituting in eq1

$y \cos \sin^2 + y \cos^3 = \sin \cos$

taking $y \cos$ common

$y \cos (\sin^2 + \cos^2) = \sin \cos$ { we know $\sin^2 + \cos^2 = 1$}

$y \cos = \sin \cos$

$y = \sin$

substituting in eq 2

$x \sin = \sin \cos$

$x = \cos$

$x^2 + y^2 = \sin^2 + \cos^2 = 1$

Question 31 :

What % of a day is 30 minutes ?

Difficulty : Moderate **Average Time : 74 Seconds**

Options :

1. 2.83
2. 2.083
3. 2.09
4. 2.075

Solution :

The correct option is 3.

No of minutes in a day = 24 × 60

% of a day 30 minutes is = $63 \times \frac{825}{36} = \frac{5775}{4}$ = 2.083

Question 32 :

Three containers have their volumes in the ratio 3 : 4: 5. They are full of mixtures of milk and water. The mixtures contain milk and water in the ratio of (4:1), (3: 1), and (5: 2) respectively. The contents of all these three containers are poured into a fourth container. The ratio of milk and water in the fourth container is

Difficulty : Moderate

Average Time : 47 Seconds

Options :

1. 4 : 1
2. 151 : 48
3. 157 : 53
4. 5 : 2
5. None of these

Solution :

The correct answer is **Option 3 i.e. 157: 53.**

Application

Let the volume be 3x, 4x, and 5x respectively.

Container with volume 3x:

Milk = 4/(4 + 1) × 3x

Water = 1/(4 + 1) × 3x

Container with volume 4x:

Milk =3/(3 + 1) × 4x

Water = 1/(3 + 1) × 4x

Container with volume 5x:

Milk = 5/(5 + 2) × 5x

Water = 2/(5 + 2) × 5x

Total milk = (12x/5) + (12x/4) + (25x/7) = (1256x/140).

Total water = (3x/5) + (4x/4) + (10x/7) = (424x/140).

The ratio of milk to water in 4th container = 1256/424 = 157:53.

Question 33 :

In what proportion must a grocer mix sugar at Rs.12 a kg and Rs.7 a kg so as to make a mixture worth Rs.8 a kg ?

Difficulty : Moderate

Average Time : 67 Seconds

Options :

1. 7 : 12
2. 1 : 4
3. 2 : 3
4. 12 : 7

Solution :

The correct option is 2.

using Alligation

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

required proportion is 1 : 4

alternatively

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

12x +7y = 8x + 8y = 4x = y

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

hence 1 : 4

Question 34 :

Fifteen movie theatres average 600 customers per theatre per day.If six of the theatres close down but the total theatre attendence stays the same,then the average daily attendence per theatre among the remaining theatres is

Difficulty : Moderate

Average Time : 54 Seconds

Options :

1. 900
2. 1000
3. 1100
4. 1200

Solution :

The correct option is 2.

average daily attendence per theatre among the remaining theatres to be x

15 × 600 = 9 × x

$63 \times \frac{825}{36} = \frac{5775}{4} = x$

x = 1000

Question 35 :

The average weight of A, B and C is 45 kg. If the average weight of A and B be 40 kg and that of B and C be 43 kg, then the weight of B is:

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

Options :

1. 31 kg
2. 32 kg
3. 29.5 kg
4. 35 kg

Solution :

The correct option is 1.

average weight of A, B and C is 45 kg

$63 \times \frac{825}{36} = \frac{5775}{4} = 45$

A + B + C = 45 × 3 = 135

the average weight of A and B is 40 kg

$63 \times \frac{825}{36} = \frac{5775}{4} = 40$

A + B = 40 × 2 = 80

the average weight of B and C is 43 kg

$63 \times \frac{825}{36} = \frac{5775}{4} = 43$

B + C = 43 × 2 = 86

adding A + B + B + C = 80 + 86 = 166

subtracting A + B + C from this we get

166 - 135 = 31

B = 31kg

Question 36 :

The batting average for 40 innings of a cricket player is 50 runs. His highest score exceeds his lowest score by 172 runs, If these two innings are excluded, the average of the remaining 38 innings is 48 runs. The highest score of the player is

Difficulty : Moderate **Average Time : 70 Seconds**

Options :

1. 165
2. 170
3. 172
4. 174

Solution :

The correct option is 4.

let the score of lowest inning = x

score of highest inning = x + 172

avg of 38 innings = 48

total score of 38 innings = 48 × 38 = 1824

total score of 40 innings = 50 × 40 = 2000

x + x + 172 = 2000 - 1824

2x + 172 = 176

2x = 4

x = 2

highest score of the player = 172 + 2 = 174

Question 37 :

4%of the selling price of an article is equal to 5% of its cost price. Again 20% of the selling price is Rs.120 more than 22% of its cost price. The ratio of cost price & selling price is

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

Options :

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

Solution :

The correct option is 3.

let Selling price be SP, Cost price be CP

4% of SP = 5% CP

SP = $63 \times \frac{825}{36} = \frac{5775}{4}$

SP = $63 \times \frac{825}{36} = \frac{5775}{4}$ ---------> using this in the below equation

20% of SP = 120 + 22% of CP

$63 \times \frac{825}{36} = \frac{5775}{4}$ × $63 \times \frac{825}{36} = \frac{5775}{4}$ = 120 + 22% CP

$63 \times \frac{825}{36} = \frac{5775}{4}$ CP = 120 + $63 \times \frac{825}{36} = \frac{5775}{4}$ CP

$63 \times \frac{825}{36} = \frac{5775}{4}$ CP – $63 \times \frac{825}{36} = \frac{5775}{4}$ CP = 120

$63 \times \frac{825}{36} = \frac{5775}{4}$ CP = 120

CP = 4000

SP = $63 \times \frac{825}{36} = \frac{5775}{4}$ × 4000 = 5000

CP : SP = 4000 : 5000 = 4 : 5

Question 38 :

A shopkeeper sells rice at 10% profit and uses weight 30% less than the actual measure. His gain percent is

Difficulty : Moderate | **Average Time : 83 Seconds**

Options :

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

2. $63 \times \frac{825}{36} = \frac{5775}{4}$

3. $63 \times \frac{825}{36} = \frac{5775}{4}$

4. $63 \times \frac{825}{36} = \frac{5775}{4}$

Solution :

The correct option is 2.

let the weight be 1000 g

profit% = 10%

altered weight = 1000 - 30% of 1000 = 1000 - 300 = 700g

gain % = [100 + profit%] $63 \times \frac{825}{36} = \frac{5775}{4}$ - 100

gain % = [100 + 10] $63 \times \frac{825}{36} = \frac{5775}{4}$

= $63 \times \frac{825}{36} = \frac{5775}{4}$

Question 39 :

Due to 25% fall in the rate of eggs, one can buy 2 dozen eggs more than before by investing Rs.162. Then the orignal rate per dozen of the eggs is

Difficulty : Moderate | **Average Time : 70 Seconds**

Options :

1. Rs. 22
2. Rs. 24
3. Rs. 27
4. Rs. 30

Solution :

The correct option is 3.

Question 40 :

Last year Mr. A bought two paintings. This year he sold them for Rs, 20,000 each. On one, he made a 25% profit and on the other he had a 25% loss.Then his net profit or loss is

Difficulty : Moderate **Average Time : 35 Seconds**

Options :

1. He lost more than Rs.2000
2. He lost less than Rs, 2000
3. He earned more than than Rs, 2000
4. He earned less than Rs.2000

Solution :

The correct option is 1.

SP of each painting = 20000

profit on 1st painting = 25%

loss on 2nd painting = 25%

CP + profit = SP

profit = $63 \times \frac{825}{36} = \frac{5775}{4}$ × CP

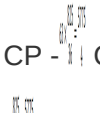
CP + $\frac{5775}{4}$CP = SP

$\frac{5775}{4}$CP = SP { SP =20000}

CP = $\frac{4}{5775}$ × 20000 = 16000

CP - loss = SP

loss = $63 \times \frac{825}{36} = \frac{5775}{4}$ × CP

CP -  CP = SP

 CP = SP { SP =20000}

CP = $\frac{63 \times 825}{36} = \frac{5775}{4}$ × 20000 = 26666.66

Total CP = 16000 + 26666.66 = 42666.66

total SP = 20000 + 20000 = 40000

loss = 42666.66 - 40000 = 2666.66

loss is more than 2000

Question 41 :

A businessman's earning increase by 25%in one year but decreases by 4% in the next. Going by this pattern, after 5 years, his total earnings would be Rs.72000. Whatis his present earning?

Difficulty : Moderate **Average Time : 98 Seconds**

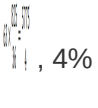
Options :

1. Rs.10000
2. Rs.80000
3. Rs.40000
4. Rs.54000

Solution :

The correct option is 3.

using the chaining method

we can write 25% =  , 4% = $\frac{63 \times 825}{36} = \frac{5775}{4}$

1st years increase 4-----> 5

2nd year decrease 25 ----> 24

3rd year increase 4--------> 5

4th year decrease 25 ----> 24

5th years increase 4-----> 5

---

initial ---> final ratio is 5 --------> 9

after 5 years earning is 9 --->72000

present earning = 5 × 8000 = rs 40000

Question 42 :

Let 0 x 1. Then the correct in equality is

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

Options :

1. x x x^2
2. x x x^2
3. x^2 x x
4. x x^2 x

Solution :

The correct option is 3.

Let us take an example of 0.25 (0 0.25 1)

x^2 = .0625

$$\sqrt{0.25} = 0.5

0.0625 0.25 0.5

So , the correct order is x^2 x x

So, the answer would be option c) x^2 x x

Question 43 :

Three bells ring at interval of 36 seconds, 40 seconds and 48 seconds respectively. They start ringing together at a particular time. They will ring together after every

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

Options :

6 minutes

2. 12 minutes
3. 18 minutes
4. 24 minutes

Solution :
The correct option is 2.

Given that Three bells ring at interval of 36 seconds, 40 seconds and 48 seconds respectively

To find particular time after which they will ring together, we need to find L.C.M of 36, 40 & 48.

L.C.M of 36,40 & 48 is 720. Therefore three bells will ring together after every 720seconds i.e.., 12minutes.

Question 44 :
if the sum of the digits of a three digit number is subtracted from that number, then it will always be divisible by

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

Options :

1. 3 only
2. 9 only
3. both 3 and 9
4. all of 3, 6 and 9

Solution :
The correct option is 3.

Let the three digit number be xyz.

(100x + 10y +z) - (x + y +z) = 99x - 9y , which is divisible by both 3 and 9.

So, the answer would be option c)both 3 and 9

Question 45 :
Which ofthe following is correct ?

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

Options :

$63 \times \frac{825}{36} = \frac{5775}{4}$

2. $63 \times \frac{825}{36} = \frac{5775}{4}$

3. $63 \times \frac{825}{36} = \frac{5775}{4}$

4. $63 \times \frac{825}{36} = \frac{5775}{4}$

Solution :

The correct option is 2.

$63 \times \frac{825}{36} = \frac{5775}{4}$

Take denominator as 15,

$63 \times \frac{825}{36} = \frac{5775}{4}$

So, the correct order will be,

$63 \times \frac{825}{36} = \frac{5775}{4}$

So, the answer would be option b) $63 \times \frac{825}{36} = \frac{5775}{4}$

Question 46 :

The greater of the two numbers whose product is 900 and sum exceeds their difference by 30 is

Difficulty : Moderate | **Average Time : 74 Seconds**

Options :

1. 60
2. 75
3. 90
4. 100

Solution :

The correct option is 1.

Let's consider two numbers as x & y.

Given that, Product of two numbers x & y is xy = 900 ---- (1)

and sum of the two numbers exceeds the difference by 30

i.e.., (x + y) (x y) = 30

=> 2y = 30

=> y = 15

Substituting y = 15 in equation 1, we get x = 60

Question 47 :

The smallest fraction, which should be added to the sum of and to make the result a whole number, is

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

Options :

1. $63 \times \frac{825}{36} = \frac{5775}{4}$
2. $63 \times \frac{825}{36} = \frac{5775}{4}$
3. $63 \times \frac{825}{36} = \frac{5775}{4}$
4. $63 \times \frac{825}{36} = \frac{5775}{4}$

Solution :

The correct option is 4.

Take only fractional parts and add them,

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

$$= 63 \times \frac{825}{36} = \frac{5775}{4}$$

Nearest whole number will be 2, i.e $63 \times \frac{825}{36} = \frac{5775}{4}$

$$2 - 63 \times \frac{825}{36} = \frac{5775}{4}$$

So, the answer would be option d) $63 \times \frac{825}{36} = \frac{5775}{4}$

Question 48 :

Find the cube root of (-13824) OR Find the value of

Difficulty : Moderate **Average Time : 74 Seconds**

Options :

1. 38
2. -38
3. 24
4. -24

Solution :

The correct answer is **Option 4** i.e. **-24.**

$63 \times \frac{825}{36} = \frac{5775}{4}$

$= 63 \times \frac{825}{36} = \frac{5775}{4}$

= –24

So, the answer would be option 4: –24.

Question 49 :

The sum of three positive numbers is 18 and their product is 162. If the sum of two numbers is equal to the third then the sum of squares of the numbers is

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

Options :

1. 120
2. 126
3. 132
4. 138

Solution :

The correct option is 2.

Let us consider the three positive numbers as x,y and z.

Sum of three positive numbers x + y + z = 18 ---------> (1)

product of three numbers xyz = 162 ----------> (2)

Given that sum of two numbers is equal to the third. i.e.., x + y = z

=> 2z = 18

=> z = 9

replacing z = 9 in equation (1) & (2), we get x + y = 9 and xy = 18

Solving above, we get x = 6 and y = 3

therefore, sum of squares of the numbers = $6^2 + 3^2 + 9^2 = 126$

Question 50 :

The sum of three consecutive even numbers is 28 more than the average of these three numbers. Then the smallest of these three numbers is

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

Options :

1. 6
2. 12
3. 14
4. 16

Solution :

The correct option is 2.

Given that, Sum of the three consecutive even numbers is 28 more than the average of those three numbers Lets consider the three numbers as 2n, 2n + 2, 2n + 4

Therefore, $2n + 2n + 2 + 2n + 4 = 63 \times \frac{825}{36} = \frac{5775}{4} + 28$

=> 6n + 6 = 2n + 2 + 28

=> 4n = 24 => n = 6

Therefore, smallest number 2n = 2(6) = 12

Question 51 :

In a division sum, the divisor 'd' is 10 times the quotient 'q' and 5 times the remainder'r'. If r = 46, the dividend will be

Difficulty : Moderate

Average Time : 50 Seconds

Options :

1. 5042
2. 5348
3. 5336
4. 4276

Solution :

The correct option is 3.

We know that

Dividend = (Divisor × Quotient) + Remainder ---- (1)

Given that Divisor = 10 times the Quotient

=> Divisor = 10Q ---- (2)

and Divisor = 5 times the remainder

=> Divisor = 5R = 5(46) = 230

Substituting divisor value in equation(2), we get, Q= 23

Substituting all values in equation (1), we get

Dividend = (230 × 23) + 46 = 5336

Question 52 :

A man can do a piece of work in 30 hours. If he works with his son then the same piece of work is finished in 20 hours. If the son works alone he can do the work in

Difficulty : Moderate

Average Time : 51 Seconds

Options :

1. 60 hours
2. 50 hours

25 hours

4. 10 hours

Solution :

The correct option is 1.

Given that man can do a work in 30 hr

In 1hr, work done by Man = $63 \times \frac{825}{36} = \frac{5775}{4}$

Along with Son, Man can do work in 20 hr

In 1hr, work done by Man and Son = $63 \times \frac{825}{36} = \frac{5775}{4}$

=> In 1hr, work done by son = $63 \times \frac{825}{36} = \frac{5775}{4}$

=> work done by son in 1hr = $63 \times \frac{825}{36} = \frac{5775}{4}$

Therefore, son takes 60hr to complete the work.

Question 53 :

A water tap fills a tub in 'p' hours and a sink at the bottom empties it in 'q' hours. If p q and both tap and sink are open, the tank is filled in 'r' hours; then

Difficulty : Moderate

Average Time : 69 Seconds

Options :

1. $63 \times \frac{825}{36} = \frac{5775}{4}$
2. $63 \times \frac{825}{36} = \frac{5775}{4}$
3. r = p + q
4. r = p q

Solution :

The correct option is 2.

It is given, A water tap fills a tub in 'p' hours and a sink at the bottom empties it in 'q' hours.

Total time to fill the tank will be

$63 \times \frac{825}{36} = \frac{5775}{4}$

So, the answer would be option b) $63 \times \frac{825}{36} = \frac{5775}{4}$

Question 54 :

John does piece of work in 3 hours, Joe does of the remaining work in 1 hour and George finishes remaining work in 5 hours. How long would it have taken the three working together to do the work ?

Difficulty : Moderate **Average Time : 64 Seconds**

Options :

1. $63 \times \frac{825}{36} = \frac{5775}{4}$
2. $63 \times \frac{825}{36} = \frac{5775}{4}$
3. $63 \times \frac{825}{36} = \frac{5775}{4}$
4. $63 \times \frac{825}{36} = \frac{5775}{4}$

Solution :

The correct option is 4.

John can do $\frac{825}{36} : \frac{5775}{4}$ work in 3 hours , So he can complete entire work in 6 hours.

Remaining work = 1 - 1/2 = 1/2

Joe does 1/4 of the remaining work i.e 1/8 work in 1 hour , So he can complete entire work in 8 hours.

Now remaining work = 3/8

George finishes remaining work in 5 hour.

George do 3/8 work in 5 hours ,So he can complete entire work in 40/3 hours.

If all three work together, then,

$63 \times \frac{825}{36} = \frac{5775}{4}$

So, the answer would be option d) $63 \times \frac{825}{36} = \frac{5775}{4}$

Question 55 :

A does of a work in 9 days. Then B joined him and they together completed the remaining work in 6 days. B alone can finish the whole work in

Difficulty : Moderate **Average Time : 88 Seconds**

Options :

1. $63 \times \frac{825}{36} = \frac{5775}{4}$
2. $63 \times \frac{825}{36} = \frac{5775}{4}$
3. 10 days
4. 18 days

Solution :

The correct option is 4.

If A can complete $63 \times \frac{825}{36} = \frac{5775}{4}$ of work in 9 days,

then he can complete whole work in $63 \times \frac{825}{36} = \frac{5775}{4}$ = 22.5 days.

Let B take x number of days to complete the work.

A/c to question,

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

x = 18 days.

So , the answer would be option d) 18 days

Question 56 :

The daily wages of A and B respectively are Rs.3.50 and 2.50. When A finishes a certain work, he gets a total wage of Rs. 63. When B does the same work, he gets a total wage Rs.75. If both of them do it together what is the cost of the work ?

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

Options :

Rs. 67.50

2. Rs. 27.50
3. Rs. 60.50
4. Rs. 70.50

Solution :

The correct option is 1.

daily wage of A = rs 3.50

total wage earned by A = rs 63

no of days A worked = $63 \times \frac{825}{36} = \frac{5775}{4}$ = 18 days

daily wage of B = rs 2.50

total wage earned by B = rs 75

no of days B worked = $63 \times \frac{825}{36} = \frac{5775}{4}$ = 30 days

no of days taken to complete the work when A and B do together = $63 \times \frac{825}{36} = \frac{5775}{4}$ {when A takes x days and b takes y days}

= $63 \times \frac{825}{36} = \frac{5775}{4}$ days

Total amount paid to A and B per day = 3.50 + 2.50 = rs 6

Total amount to be paid = $63 \times \frac{825}{36} = \frac{5775}{4}$ = Rs 67.50

Question 57 :

A man does double the work done by a boy in the same time. The number of days that 3 men and 4 boys will take to finish a work which can be done by 10 men in 8 days is

Difficulty : Moderate

Average Time : 84 Seconds

Options :

1. 4
2. 16

3. $63 \times \frac{835}{36} = \frac{5775}{4}$

4. $63 \div \frac{835}{36} = \frac{5775}{4}$

Solution :
The correct option is 2.

work done by man : work done by boy = 2 : 1

let work done by a man in 1 day = 2 units

let work done by a boy in 1 day = 1 units

work done by 10 men in 8 days = 10 × 2 × 8 = 160 units

work done by 3 men and 4 boys in 1 day = 3 × 2 + 4 × 1 = 10 units

number of days = $63 \times \frac{835}{36} = \frac{5775}{4}$ = 16 days

Question 58 :
The marked price of an article is 30% higher than the cost price. If a trader sells the articles allowing 10% discount to customer, then the gain percent will be

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

Options :

1. 17
2. 20
3. 19
4. 15

Solution :
The correct option is 1.

let cost price (CP) = rs 100

MP (marked price) = 30% more than cost price = $63 \times \frac{835}{36} = \frac{5775}{4}$ × 100 = 30 + 100 { here 100 =CP}

MP =rs 130

discount% = 10%

discount = 10% of 130 = rs 13 { âˆ´ discount = $63 \times \frac{825}{36} = \frac{5775}{4}$ × MP}

So selling price SP = 130 -13 = 117 { âˆ´ SP = MP- discount}

gain = 117 - 100 = 17 { gain = SP-CP}

gain % = $63 \times \frac{825}{36} = \frac{5775}{4}$ × 100 = 17%

Question 59 :

A watch dealer pays 10% customs duty on a watch which costs Rs.500 abroad. He desires to make a profit of 20% after giving a discount of 25% to the buyer, The marked price should be

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

Options :

1. Rs. 950
2. Rs. 800
3. Rs. 880
4. Rs. 660

Solution :

The correct option is 3.

cost price (CP) of watch = cost + custom duty

CP = 500 + $63 \times \frac{825}{36} = \frac{5775}{4}$ × 500 = 500 + 50 = 550

profit = 20%

profit = $63 \times \frac{825}{36} = \frac{5775}{4}$ × CP = $63 \times \frac{825}{36} = \frac{5775}{4}$ × 550 = 110

selling price (SP) = CP + profit

SP = 550 + 110 = 660

discount = 25%

SP = 75% of MP {MP = marked price}

660 = 75% of MP

MP = $63 \times \frac{825}{36} = \frac{5775}{4} \times 100 = 880$

Question 60 :

Rs.2420 were divided among A, B, C so that A: B=5 : 4 and B : C = 9 : 10 then C gets

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

Options :

1. 680
2. 800
3. 900
4. 950

Solution :

The correct option is 2.

A : B {multiplying A and B with 9}

5 : 4

B : C {multiplying B and C with 4}

9 : 10

we get A : B : C = 45 : 36 : 40

A + B + C = 45 + 36 + 40 = 121 units

121 units = 2420

1 unit = 20

amount with C = 40 units = 40 × 20 = 800

Question 61 :

49 Kg of blended tea contain Assam and Darjeeling tea in the ratio 5 : 2. Then the quantity of Darjeeling tea is to be added to the mixture to make the ratio of Assam to Darjeeling tea 2 : 1 is

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

Options :

1. 4.5 kg
2. 3.5 kg
3. 5 kg
4. 6 kg

Solution :

The correct option is 2.

given 49 kg of tea

Assam tea : Darjeeling tea = 5 : 2

quantity of Assam tea = $\frac{5}{7} \times 49 = 35$kg

quantity of Darjeeling tea = $\frac{2}{7} \times 49 = 14$kg

In order to make the ratio of Assam tea : Darjeeling tea = 2 : 1

present quantity of Assam tea = 35kg

divide it by 2 we get 17.5 { The required quantity}

quantity of Darjeeling tea at present = 14kg

required quantity is 17.5 kg

amount to be added = 17.5 - 14 = 3.5 kg

Question 62 :

In a regiment the ratio between the number of officers to soldiers was 3 : 31 before battle. In a battle 6 officers and 22 soldiers werekilled and the ratio became 1 : 13, the number of officers in the regiment before battle was

Difficulty : Moderate **Average Time : 66 Seconds**

Options :

1. 31
2. 38
3. 21

28

Solution :

The correct option is 3.

no of officers : no of soldiers = 3 : 31

no of officers = 3x

no of soldiers = 31x

In a battle 6 officers and 22 soldiers were killed

new no of officers = 3x - 6

new no of soldiers = 31x - 22

new ratio 1 : 13

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

13(3x - 6) = 31x - 22

39x - 78 = 31x - 22

8x = 78 - 22

8x = 56

x = 7

number of officers in the regiment before battle was = 3x = 3 × 7 = 21

Question 63 :

The average of 7 consecutive numbersis 20. The largest of these numbersis

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

Options :

1. 20
2. 23
3. 24
4. 26

Solution :

The correct option is 2.

let the consecutive no be x, x + 1, x + 2, x + 3, x + 4, x + 5, x + 6

sum of all consecutive numbers = x + x + 1 + x + 2 + x + 3 + x + 4 + x + 5 + x + 6 = 7x + 21 = 7(x + 3)

average = $63 \times \frac{825}{36} = \frac{5775}{4}$

given average = 20

20 = $63 \times \frac{825}{36} = \frac{5775}{4}$ = x + 3

x + 3 = 20

=> x = 17

largest number is x + 6 = 17 + 6 = 23

Question 64 :

Mukesh has twice as much money as Soham, Soham has 50% more moneythan Pankaj. If the average money with them is Rs.110, then Mukesh has

Difficulty : Moderate

Average Time : 53 Seconds

Options :

1. 155
2. 160
3. 180
4. 175

Solution :

The correct option is 3.

let money with pankaj = x

money soham = 1.5x

money with mukesh = 3x

total amount with all them = 5.5x

average money with them = 110

total money with them = 330

5.5x = 330

$x = \frac{63 \times 825}{36} = \frac{5775}{4}$

x = 60

amount with mukesh = 3x = 3 × 60 = 180

Question 65 :

The average daily income of 7 men, 11 women, and 2 boys Rs.257.50. If the average daily income of the men is Rs.10 more than that of women and the average daily income of the women is Rs.10 more than that of boys, the average daily income of a man is

Difficulty : Moderate

Average Time : 56 Seconds

Options :

1. Rs.277.5
2. Rs.250
3. Rs.265
4. Rs.257
5. None of these

Solution :

The correct answer is **Option 3 i.e. Rs. 265**

Application

Let per day Income of Boy, woman, man are = x, x + 10, x + 20

According to the question,

(7M + 11W + 2B)/20 = 257.50

7(x + 20) + 11(x + 10) + 2x = 257.50 × 20

7x + 140 + 11x + 110 + 2x = 5150

20x = 5150 - 250

x = 4900/20 = 245.

Per day income of man = x + 20 = 245 + 20 = 265.

Question 66 :

The profit on selling an article for Rs.425 is the same as the loss on selling it for Rs.355, then the cost price of the article is

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

Options :

1. 410
2. 380
3. 400
4. 390

Solution :

The correct option is 4.

profit on selling an article for Rs.425

profit = SP - CP (cost price)

profit = 425 - CP

loss on selling it for Rs.355

loss = CP - SP

loss = CP - 355

profit = loss

425 - CP = CP - 355

425 + 355 = 2CP

2CP = 780

CP = rs 390

Question 67 :

A & B jointly made a profit of Rs.1650 and they decided to share it such that of A's profit is equal to of B's profit. Then profit of B is

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

Options :

1. Rs.700
2. Rs.750
3. Rs.850
4. Rs.800

Solution :

The correct option is 2.

of A's profit is equal to $63 \times \frac{825}{36} = \frac{5775}{4}$ of B's profit

A = $63 \times \frac{825}{36} = \frac{5775}{4}$ B

A's profit : B's profit = 6 : 5

total profit = rs 1650

A + B = 6 + 5 = 11 units

11 units = rs 1650

1 unit = rs 150

B's profit = 5 × 150 = rs 750

Question 68 :

In an examination 73% of the candidates passed in quantitative aptitude test, 70% passed in General awareness and 64%

passed in both. If 6300 failed in both subjects the total number of examinees were?

Difficulty : Moderate **Average Time : 64 Seconds**

Options :

1. 60000
2. 50000
3. 30000
4. 25000
5. Npne of these

Solution :

The correct answer is **Option 3 i.e. 30000**

Application
Total passed % = 73% + 70% - 64% = 79%
Failed % =(100-79)% = 21%
21% = 6300
1% = 6300/21
100% = (6300/21) × 100 = 30000
Hence there were 30000 examinees

Question 69 :

A man spends 75% of his income. His income increases by 20% and his expenditure also increases by 10%. Find the percentage increase in his savings.

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

Options :

1. 25%
2. 50%
3. 15%

10%

Solution :

The correct option is 2.

let the income = rs 100

expenditure = 75% of his income = 75% of 100 = rs 75

savings = 100 - 75 = 25 (savings = income expenditure)

income increases by 20%

new income = 100 + $63 \times \frac{825}{36} = \frac{5775}{4}$ × 100 = 100 + 20 = rs 120

new expenditure = 75 + $63 \times \frac{825}{36} = \frac{5775}{4}$ × 75 = 75 + 7.5 = rs 82.5

new savings = 120 - 82.5 = 37.5

increase in savings = new savings - initial savings = 37.5 - 25 = rs 12.5

% increase in savings = $63 \times \frac{825}{36} = \frac{5775}{4}$ × 100 = 50%

Question 70 :

On the river, Q is the mid-point between two points P and R on the same bank of the river. A boat can go from P to Q and back in 12 hours, and from P to R in 16 hours 40 min. How long would it take to go from R to P?

Difficulty : Moderate **Average Time : 66 Seconds**

Options :

1. 10/3 hrs
2. 5 hr.
3. 20/3 hrs
4. 22/3 hrs
5. none of these

Solution :

The correct answer is **Option 4 i.e. 22/3 hrs**

Application
The time required to travel from P to R = 16 hours and 40 minutes. PQ = QR(Q IS THE MIDPOINT) Required time to travel from P to Q = 1/2(16h 40m) = 8h 20m. Total time required from P to Q + Q to P = 12 hours. So, the time for Q to P = 12 h - 8 h 20 m = 3 h 40m. QP = 1/2RP (Distance) Required time to travel from R to P = 2 × QP. 2 × 3h 40m = 7h 20 m. = 22/3 hrs

Question 71 :

A car can finish a certain journey in 10 hours at a speed of 42 kmph. In order to cover the same distance in 7 hours, the speed of the car (km/h) must be increased by

Difficulty : Moderate **Average Time : 68 Seconds**

Options :

1. 12
2. 15
3. 18
4. 24

Solution :

The correct option is 3.

speed = $63 \times \frac{825}{36} = \frac{5775}{4}$

distance = speed × time = 10 × 42 = 420 km

to cover the same distance in 7 hours

speed = $63 \times \frac{825}{36} = \frac{5775}{4}$ = 60 Km/h

increase in speed = 60 - 42 =18 km/h

Question 72 :

A man travels 450 km to his home partly by train and partly by car. He takes 8 hrs 40 mins if he travels 240 km by train and rest by car. He takes 20 mins more if he travels 180 km by train and the rest by car. The speed of the car in km/hr is?

Difficulty : Moderate

Average Time : 55 Seconds

Options :

1. 45
2. 50
3. 60
4. 48
5. None of these

Solution :

The correct answer is **Option 1 i.e. 45**

Application

Speed of train = X kmph.

Speed of the car = Y kmph.

Case 1:

Time = distance/speed

(240/X) + (210/Y) = 26/3 ..... (i)

Case 2:

(180/X) + (270/Y) = 9 .....(ii)

By equation i × 3 - ii × 4,

(720/X) + (630/Y) - (720/X) - (1080/Y)

= (-450/Y) = -10

Y = 45 kmph.

Question 73 :

A train 'B' speeding with 100 kmph crosses another train C, running in the same direction, in 2 mins. If the length of the train B and C be 150m and 250m respectively, what is the speed of the train C (in kmph) ?

Difficulty : Moderate

Average Time : 61 Seconds

Options :

1. 75
2. 88
3. 95
4. 110

Solution :

The correct option is 2.

Given, speed of train B = 100 kmph

Let speed of train C = x kmph

length of train B = 150 m = 0.15 km

length of train C = 250 m = 0.25 km

time taken = 2 mins = $63 \times \frac{825}{36} = \frac{5775}{4}$

time taken = $63 \times \frac{825}{36} = \frac{5775}{4}$

$63 \times \frac{825}{36} = \frac{5775}{4}$

100 x = 0.4 × 30

100 12 = x

x(speed of the train C) = 88 kmph

Question 74 :

The compound interest on Rs. 30,000 at 7%per annum for n years is Rs. 4347. The value of n is

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

Options :

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

Solution :

The correct option is 2.

let A = amount P = principal r = rate of interest n = time

A = $63 \times \frac{825}{36} = \frac{5775}{4}$

A after n years = 30000 + 4347 = 34347

P = 30000

r = 7%

34347 = $63 \times \frac{825}{36} = \frac{5775}{4}$

$63 \times \frac{825}{36} = \frac{5775}{4}$

$63 \times \frac{825}{36} = \frac{5775}{4}$ ($107^2 = 11449$)

n = 2 years

Question 75 :

If A borrowed Rs. P at x% and B borrowed Rs. Q (>P) at y% per annum at simple interest at the same time, then the amount of their debts will be equal after

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

Options :

1. $63 \times \frac{825}{36} = \frac{5775}{4}$
2. $63 \times \frac{825}{36} = \frac{5775}{4}$
3. $63 \times \frac{825}{36} = \frac{5775}{4}$
4. $63 \times \frac{825}{36} = \frac{5775}{4}$
5. None of these

Solution :

The correct answer is **Option 1 i.e.** $63 \times \frac{825}{36} = \frac{5775}{4}$

Application
SI = (P × T × R)/100
P + (P × x × T)/100 = Q + (Q × Y × T)/100
= (PxT/100) - (QyT/100) = Q - P
= T[(Px - Qy)/100]Q-P
= 100[(Q - P)/(Px - Qy)].

Question 76 :

A man invested a sum of money at compound interest. It amounted to Rs. 2420 in 2 years and to Rs. 2662 in 3 years. Find the sum.

Difficulty : Moderate

Average Time : 73 Seconds

Options :

1. RS.1000
2. RS.2000
3. RS.5082
4. RS.3000
5. None of these

Solution :

The correct answer is **Option 2 i.e. RS. 2000**

Application
R% = (2662 - 2420)/2420 × 100
(242/2420) × 100 = 10%
2 years CI% = 10 + 10 + (10 × 10)/100
= 21 %
So, 121% = 2420
1% = 2420/121
100% = (2420/121) × 100 = 2000

Question 77 :

if a sum of money becomes 4000 in 2 yrs and 5500 in 4 yrs 6 months at the same rate of simple interest per annum. Then the rate of simple interest is

Difficulty : Moderate

Average Time : 49 Seconds

Options :

$63 \times \frac{825}{36} = \frac{5775}{4}$

2. $63 \times \frac{825}{36} = \frac{5775}{4}$

3. $63 \times \frac{825}{36} = \frac{5775}{4}$

4. $63 \times \frac{825}{36} = \frac{5775}{4}$

Solution :

The correct option is 1.

Amount in 2 years = 4000

amount in 4.5 years = 5500

interest received in 2.5 years= 5500 - 4000 = 1500

interest received in 1 year = 600

interest received in 2 years = 1200

amount = principal + interest

amount received in 2 years = principal + 1200

4000 - 1200 = 2800

principal = 2800

interest = 600

Rate of interest = $63 \times \frac{825}{36} = \frac{5775}{4}$

Question 78 :

A hollow cylindrical tube 20 cm long is madeofiron andits external and internal diameters are 8 cm and 6 cm respectively. The volume (in cubic cm) of iron used in making the tube is (Take)

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

Options :

1. 1860

440

3. 230
4. 890

Solution :

The correct answer is **option 2** i.e. **440**

volume of hollow cylinder = $(r1^2 \ r2^2)h$

h = 20

r1 (external radius) = external diameter ÷ 2 = 8 ÷ 2 = 4

r2 (internal radius) = internal diameter ÷ 2 = 6 ÷ 2 = 3

volume of hollow cylinder = $(4^2 \ 3^2)20 = \frac{63 \times 825 \ 5775}{16} (7)20 = 440$

Short Trick:

In this question answer will be multiple of 11. So check the option which will be divisible by 11.

Only option 2 is divisible by 11.

Question 79 :

If the areas of three adjacent faces of a rectangular box which meet in a corner are 12cm2, 15cm2 and 20cm2 respectively. Then the volume of the box is

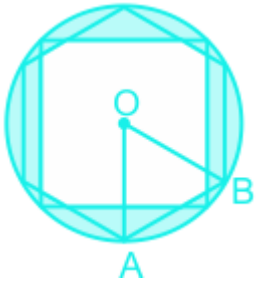
Difficulty : Moderate | **Average Time : 61 Seconds**

Options :

1. 3600 cm^3
2. 300 cm^3
3. 60 cm^3
4. 180 cm^3

Solution :

The correct option is 3.



let length, breadth, height be l, b, h respectively

l × b = 12 ---------- eq 1

b × h = 15----------eq2

h × l = 20----------eq3

multiply eq 1 by eq2 and dividing eq3 we get

$$63 \times \frac{825}{36} = \frac{5775}{4}$$

b = 3

from eq 1 we get l = 4

from eq 2 we get h = 5

volume of the cuboid = l × b × h = 3 × 4 × 5 60 = cm^3

Question 80 :

The ratio between the length and the breadth of a rectangular park is 3 : 2. If a man cycling along the boundary of the park at the speed of 12 km/hour completes one round in 8 minutes, then the area of the park is:

Difficulty : Moderate | **Average Time : 68 Seconds**

Options :

1. 153650 m^2
2. 135600 m^2
3. 153600 m^2
4. 156300 m^2

Solution :

The correct answer is **option 3** i.e. **153600 m^2**

Let Length = l, Breadth = b

l = 3x, b = 2x

Perimeter of the Rectangular park = Distance covered by the man in one round

= 12 × 5/18 × 8 × 60

= 1600 m

So,

2(3x + 2x) = 1600

5x = 800

x = 160

l = 3x = 160 × 3 = 480

b = 2x = 160 × 2 = 320

Hence,

Area of the rectangle = l × b = 480 × 320

= 153600 m^2

Question 81 :

If the radius of a cylinder opens at both the ends, is decreased by 25%, and the height of the cylinder is increased by 25%. Then the curved surface area of the cylinder thus formed

Difficulty : Moderate

Average Time : 63 Seconds

Options :

1. remains unaltered
2. is increased by 25%
3. is increased by 6.25%
4. is decreased by 6.25%
5. none of these

Solution :

The correct answer is **Option 4 i.e. is decreased by 6.25%.**

Application
Let the radius of the original cylinder = r cm and the height = h cm. Surface area of cylinder = 2rh New radius after decrease =75r/100 â€‹= 0.75r New height after increase = 125â€‹h/100 = 1.25h The new surface area of the cylinder = 2 × 0.75r × 1.25h = 1.875rh. Since, 1.875 2, the surface area has decreased. %decrease = (original surface area - New surface area)/original surface area × 100 = (2rh - 1.875)/2rh × 100 = (0.125/2) × 100 = 6.25%.

Question 82 :

A cylindrical pencil of diameter 1.2 cm has one of its end sharpened into a conical shape of height 1.4 cm. The volume of the material removed is:

Difficulty : Moderate

Average Time : 69 Seconds

Options :

1. 1.056 cm^3
2. 4.244 cm^3
3. 12.56 cm^3
4. 41.24 cm^3

Solution :

The correct answer is **option 1** i.e. **1.056 cm^3**

The volume of the material removed = volume of cylinder - volume of cone

= r^2h \(\dfrac{1}{3}\)r^2h

= \(\dfrac{1}{3}\)r^2h {r = \(\dfrac{1.2}{2}\)= 0.6, h = 1.4}

= \(\dfrac{2}{3}\)×\(\dfrac{22}{7}\)× 0.6^2 × 1.4 = 2 × 22 × 0.2 × 0.2 × 0.6 = 1.056 cm^3

Short Tric:

Answer will be divisible by 11.

Only option 1 divisible by 11.

Question 83 :

A rectangular park 60 m long and 40 m wide has two concrete crossroads running in the middle of the park and the rest of the park has been used as a lawn. If the area of the lawn is 2109 m2 then the width of the road is:

Difficulty : Moderate **Average Time : 70 Seconds**

Options :

1. 3 m
2. 5 m
3. 6 m
4. 2 m
5. None of these

Solution :

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

Application
Area of the park = (60 x 40) m^2 = 2400 m^2
Area of the lawn = 2109 m^2
Area of the crossroads = (2400 - 2109) m^2 = 291 m^2
Let the width of the road be x metres. Then,
60x + 40x - x^2 = 291
x^2 - 100x + 291 = 0
(x - 97)(x - 3) = 0
x = 3 m

Question 84 :

Four circles of equal radii are described as the four corners of a square so that each touches two of the other circles. If each side of the square is 140 cm then the area of the space enclosed between the circumference of the circles is: (take)

Difficulty : Moderate

Average Time : 75 Seconds

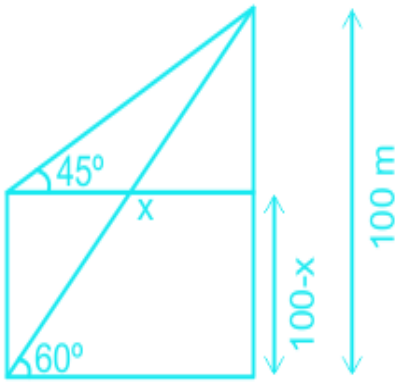
Options :

1. 4200 cm^2
2. 2100 cm^2
3. 7000 cm^2
4. 2800 cm^2
5. None of these

Solution :

The correct answer is **Option 1** i.e. **4200cm^2**

Application



Radius of each circle = side/2 = 140/2 = 70 cm.

Area of four sectors = 22/7 × 70 × 70 = 15400 cm^2

Area of square = $side^2$ = 140^2 = 19600 cm^2

Area of enclosed space = (19600 - 15400)cm^2 = 4200cm^2

Question 85 :

The amount of concrete required to build a concrete cylindrical pillar whose base has a perimeter of 8.8 meter and curved

surface area of 17.6 sq. meter, is (Take)

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

Options :

1. 8.325 m^3
2. 9.725 m^3
3. 10.5 m^3
4. 12.32 m^3
5. None of these

Solution :

The correct answer is **Option 4 i.e. 12.32 m^3**

Application
2r=8.8m2r=8.8m
2×22/7 × r = 8.8m
r = 1.4m
2r × h=17.6m^2
8.8 × h=17.6
h=2m
Now, vol=r^2h
=227 × 1.4 × 1.4 × 2 = 12.32m^3

Question 86 :

A hemispherical bowlof internal radius 9 cm, contains a liquid. This liquid is to befilled into small cylindrical bottles of diameter 3 cm and height 4 cm.Then the number of bottles necessary to empty the bowl is

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

Options :

1. 18

45

3. 27
4. 54

Solution :

The correct option is 4.

hemispherical bowl of internal radius 9 cm

r = 9

volume of hemispherical bowl $\frac{2}{3} \times \pi \times r^3 = \frac{2}{3} \times \pi \times 9^3 = 486\pi$

small cylindrical bottles of diameter 3 cm and height 4 cm

radius = $\frac{3}{2}$

volume of cylindrical bottles = r^2h

$= \pi \times \frac{3}{2} \times \frac{3}{2} \times 4 = 9\pi$

no of bottles required = $\frac{63\pi}{9\pi} = \frac{825}{36} = \frac{5775}{4} = 54$

Question 87 :

A rectangular water tank is 80 m x × 40 m. Water flows into it through a pipe of 40 sq.cm at the opening at a speed of 10 km/hr. The water level will rise in the tank in half an hour is

Difficulty : Moderate

Average Time : 83 Seconds

Options :

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

Solution :

The correct option is 4.

given rectangular water tank is 80 m x × 40 m

volume of rectangular water tank = volume of water filled by the pipe (area of pipe × speed of flow of water)

volume of rectangular water tank = 8000 x × 4000 {âˆµ 80 m = 8000 cm , 40 m = 4000 cm}

8000 x × 4000 = 40 × 10 × 1000 × 100 {1km = 1000m, 1m = 100cm}

x = $\frac{63 \times \frac{825}{36} \div 5775}{4}$ { height raised in 1 hr}

height raised in 30 mins = $\frac{63 \times \frac{175}{36} \div 5775}{4}$

Question 88 :

A square and a regular hexagon are drawn such that all the vertices of the square and the hexagon are on a circle of radius r cm. The ratio of the area of the square and the hexagon is:

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

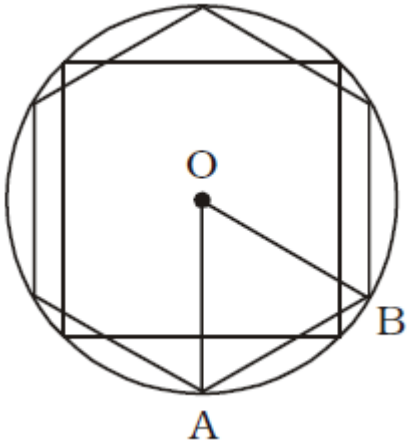
Options :

1. 3 : 4
2. 4 : 33
3. 2 : 3
4. 1 : 2
5. None of these

Solution :

The correct answer is **Option 2** i.e. **4 : 33**

Application



Diagonal of square = 2r cm

Area of square = $1/2 \times (2r)^2 = 2r^2$ cm^2

Area of the triangle AOB = $(3/4)r^2$ cm^2

Area of hexagon = $(63/4)r^2 = (33/2)r^2$ cm^2

Required ratio = $2r^2 : (33/2)r^2$

= 4 : 33

Question 89 :

A solid cylinder has a total surface area of 231 sq.cm. If its curved surface area is of the total surface area, then the volume of the cylinder is

Difficulty : Moderate

Average Time : 65 Seconds

Options :

1. 154 cu.cm
2. 308 cu.cm
3. 269.5 cu.cm
4. 370 cu.cm
5. None of these

Solution :

The correct answer is**Option 3 i.e. 269.5 cu.cm**

Application
Given curved surface area = 2/3
Total surface area = 2rh = 2/3{2r(r + h)}
h = 2/3(r + h)
$3h = 2r^2 + 2h$
h = 2r.....(i)
2r(r + h) = 231 (given)
2r(r + 2r) = 231
r = 7/2
Volume = $r^2h = r^2(2r)$
(22/7) × (7/2) × (7/2) × (2 × 7/2) = 269.5.

Question 90 :

The lateral surface area of a frustum of a cone, if the area of its base is 16 cm2 and the diameter of the circular upper surface is 4 cm and slant height 6 cm, will be

Difficulty : Moderate

Average Time : 65 Seconds

Options :

1. 30 cm^2
2. 48 cm^2
3. 36 cm^2
4. 60 cm^2
5. None of these

Solution :

The correct answer is **Option 3 I .e.36 cm^2**

Application

According to the question,

$R^2 = 16$

$R_2 = 16$

$R = 16 = 4$

$r = 4/2 = 2$

Now the area of the frustum = $(R + r)l$

$= (4 + 2) \times 6 = 36\ cm^2$

Question 91 :

The diameter of a sphere is twice the diameter of another sphere, The surface area ofthefirst sphere is equal to the volume of the second sphere, The magnitude of the radius ofthefirst sphereis

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

Options :

1. 12
2. 24
3. 16
4. 48

Solution :

The correct option is 2.

let radius of sphere 1 = r1

radius of sphere 2 = r2

Given, r1 = 2 r2

surface area of sphere 1 = volume of sphere 2

$4(r1)^2 =$ [illegible] $(r2)^3$

r1 = 2 r2

$4(2r2)^2 = \frac{22}{7} \times (r2)^3$

4 3

$4 = 63 \times \frac{825}{36} = \frac{5775}{4}$ (r2)

r2 = 12

r1 = 2 r2 = 2 × 12 = 24

Question 92 :

A cylinder with having a diameter of 21 cm & a height of 38 cm is full of ice cream. The ice cream is to be filled in cones of height 12 cm and diameter 7 cm having a hemispherical shape on the top. The number of such cones to be filled with ice cream is

Difficulty : Moderate **Average Time : 68 Seconds**

Options :

1. 54
2. 44
3. 36
4. 24
5. None of these

Solution :

The correct answer is **Option 1 i.e. 54**

Application

The volume of the cylinder = r^2h

= × $(22/7)^2$ × 38 = 8379/2 cm^3

The volume of the conical portion of Ice cream = $1/3r^2h$ = (1/3) × $(7/2)^2$ × 12 cm^3

The volume of the hemispherical portion of Ice cream = (2/3) × $(7/2)^3$ cm^3

The total volume of cone-shaped ice cream =

/3(49/4 × 12 + 343/4) cm^3

= /3(147 + 343/4) cm^3

= /3(588 + 343/4) cm^3

= /3 × 931/4 cm^3

Number of cones = (8379/2) × (12/931) = 54.

Question 93 :

If a3 = 117 + b3 and a = 3 + b, then the value of a + b is :

Difficulty : Moderate

Average Time : 67 Seconds

Options :

1. ±7
2. ±49
3. ±13
4. 0
5. None of these

Solution :

The correct answer is **Option 1 i.e ±7**

Application

$a^3 - b^3 = 117; a - b = 3$

$(a - b)(a^2 + ab + b^2) = 117$

$3 \times (a^2 + ab + b^2) = 117$

$= a^2 + ab + b^2 = (117/3) = 39$

$(a - b)^2 + 3ab = 39$

$3^2 + 3ab = 39$

$3ab = 39 - 9 = 30$

$ab = (30/3) = 10.$

$(a + b)^2 = (a - b)^2 + 4ab$

$= 9 + 4 \times 10 = 49$

$a + b = 49 = \pm 7$

Question 94 :

A person from the top of a hill observes a vehicle moving towards him at a uniform speed. It takes 10 minutes for the angle of depression to change from 45? to 60?. After this the time required by the vehicle to reach the bottom of the hill is

Difficulty : Moderate

Average Time : 74 Seconds

Options :

1. 12 min 20 sec
2. 13 min
3. 13 min 40 sec
4. 14 min 24 sec
5. None of these

Solution :

The correct answer is **option 3 i.e. 13 min 40 sec**

Application

AB = height of hill = h metre

Let the speed of the vehicle be v meter/minute.

Time is taken to reach B from D = t minutes

CD = 10v metre

BD = vt metre

In triangle ABC,

Tan 45 = AB/BC

1 = h/BC metre

BC = h

= (10v + vt) metre ....(i)

In triangle ABD,

Tan 60 = AB/BD

3h/vt

h = 3vt

10v + vt = 3 vt

10 = 3 t - t

10 = t (3 - 1)

t = 10/ (3 - 1)

10(3 + 1)/(3 - 1)(3 + 1) = 10(3 + 1)/2

5 (1.732 + 1) = 5 × 2.732

13.66 minutes

13 minutes 40 seconds

Question 95 :

If 2y cos = x sin and 2x sec y cosec = 3, then the value of x2 + 4y2 is

Difficulty : Moderate

Average Time : 78 Seconds

Options :

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

Solution :

The correct option is 4.

let = 45°

2y $63 \times \frac{825}{36} = \frac{5775}{4}$ = x $63 \times \frac{825}{36} = \frac{5775}{4}$ = 2y = x

$63 \times \frac{825}{36} = \frac{5775}{4}$

2x - y = $63 \times \frac{825}{36} = \frac{5775}{4}$ {substituting y = $63 \times \frac{825}{36} = \frac{5775}{4}$ }

$63 \times \frac{825}{36} = \frac{5775}{4}$

y = $63 \times \frac{825}{36} = \frac{5775}{4}$

value of $63 \times \frac{825}{36} = \frac{5775}{4}$

Question 96 :

From the top of a cliff 100 metre high, the angles of depression of the top and bottom of a tower are 45º and 60º respectively. The height of the tower is

Difficulty : Moderate

Average Time : 74 Seconds

Options :

1. $63 \times \frac{825}{36} = \frac{5775}{4}$
2. $63 \times \frac{825}{36} = \frac{5775}{4}$

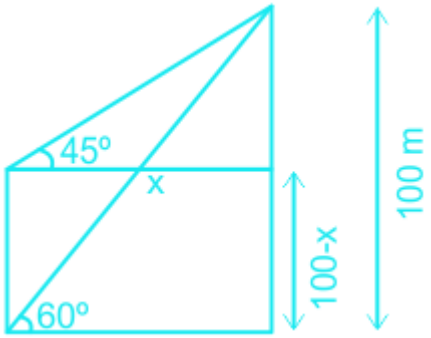
$63 \times \frac{825}{36} = \frac{5775}{4}$

4. $63 \times \frac{825}{36} = \frac{5775}{4}$

5. None of these

Solution :

The correct answer is option 1i.e. $63 \times \frac{825}{36} = \frac{5775}{4}$

Application


tan60 = 100/X

3 = 100/X

height of tower=100 - (100/3)

=100(3 - 1)/3 metre.

Question 97 :

A vertical tower stands on a horizontal plane and is surmounted by a vertical flag staff of height h. At a point on the plane, the angle of elevation of the bottom of the flag staff is and that of the top of the flag staff is . Then the height of the tower is

Difficulty : Moderate **Average Time : 77 Seconds**

Options :

1. h tan

$63 \times \frac{825}{36} = \frac{5775}{4}$

3. $63 \times \frac{825}{36} = \frac{5775}{4}$

4. None of these

Solution :
The correct option is 2.

Comprehension :
The following pie-chart shows the monthly expenditure of a family on various items. If the family spends Rs. 825 on clothing, answer the question

Question 98 :
What is the ratio of expenses on food and miscellaneous ?

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

Options :

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

Solution :
The correct option is 3.

given $36^o = 825$

$1^o = 63 \times \frac{825}{36} = \frac{5775}{4}$

ratio of expenses on food : miscellaneous

$108^o = 72^o$

$108 \times 63 \times \frac{825}{36} = \frac{5775}{4} : 72 \times 63 \times \frac{825}{36} = \frac{5775}{4}$

3 : 2

Comprehension :

The following pie-chart shows the monthly expenditure of a family on various items. If the family spends Rs. 825 on clothing, answer the question

Question 99 :

What is the average of expenses on clothing and rent?

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

Options :

1. Rs. 1443.75
2. Rs. 1344.57
3. Rs. 1574.34
4. Rs. 1734.45

Solution :

The correct option is 1.

average of expenses on clothing and rent

clothing = 36º = Rs. 825

Rent = 90º

average = $63 \times \frac{825}{36} = \frac{5775}{4}$ = 63º

36º = 825

1º = $63 \times \frac{825}{36} = \frac{5775}{4}$

$63 \times \frac{825}{36} = \frac{5775}{4}$ = 1443.75

Comprehension :

The following pie-chart shows the monthly expenditure of a family on various items. If the family spends Rs. 825 on clothing, answer the question

Question 100 :

The ratio of the average of expenses on food, clothing, and miscellaneous items to the average of expenses on savings and rent is

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

Options :

1. 3 : 2
2. 1 : 3
3. 2 : 1
4. 1 : 1
5. None of these

Solution :

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

Application
The average expenses on food, clothing, and miscellaneous items = (108 + 36 + 72)/3 = 216/3 = 72° 36° = 825 1° = 825/36 72° = (825/36) × 72 = 1650. The sum of the average of the expense of saving and rent = (54 + 90)/2 = 72° 72° = 1650 Ratio = 1650/1650 = 1: 1

Ssc Cgl Tier II Previous Year Question Paper Analysis

The analysis of Ssc Cgl Tier II Previous Year Question Paper held on 2016-12-01 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. Geometry - 10
2. Mensuration - 6
3. Data Sufficiency - 84

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.