

OVERALL ANALYSIS

Solution Report

All

Correct Answers

Wrong Answers

Not Attempted Questions

Q.1)

Max Marks: 1

If x varies inversely as $y^2 - 1$ and is equal to 24 when $y = 10$, find x when $y = 5$

A

99

Correct Option

Solution: (A)

Solution: $x = \frac{k}{y^2 - 1}$

This gives $k = 24 * 99 = 2376$

The equation becomes $x = \frac{2376}{24} = 99$

B

101

C

91

D

93

Q.2)

Subject: General Aptitude

Max Marks: 1

Determine the first term of Geometric Progression, the sum of whose first term and the third term is 40 and the sum of the second term and the fourth term is 80.

A

12

B

16

C

8

Correct Option

Solution: (C)

Solution: From the given question it can be clearly said that the common ratio of the GP must be 2 as the sum of the second and fourth term is twice the sum of the first and third term.

Now we try to check with the answer and satisfy the given sum in the question.

So the GP formed from option (c) with a common ratio of 2 is: 8, 16, 32, 64 and this GP satisfies the given conditions of the problem.

D

4

Q.3)

Max Marks: 1

The expenses for a party is partly fixed and partly variable, i.e., with the number of people going for the picnic. The charge comes to ₹ 40 per head, when there are 15 people and comes to ₹ 30 per head when there are 30 people. Find the charge per head when there are 120 people.

A

₹ 25

B

₹ 22.50

Correct Option

Solution: (B)

Solution: Expenses is E , Fixed Cost is FC and Variable Cost is VC .

$$E = FC + VC$$

$$40 * 15 = FC + VC(15)$$

$$\Rightarrow 600 = FC + VC(15) \quad \dots(i)$$

$$\Rightarrow 30 * 30 = FC + VC(30)$$

$$\Rightarrow 900 = FC + VC(30) \quad \dots(ii)$$

$$FC = ₹300 \text{ and } VC = ₹20$$

$$\text{Now, expenses for 120 people} = FC + VC(120) = 300 + 120 * 20$$

$$= ₹2700$$

$$\text{Therefore, Charge per head} = \frac{2700}{120} = ₹22.50$$

C

₹ 24.20

D

₹ 16.80

Q.4)

Subject: General Aptitude

Max Marks: 1

Which of the following represents the largest 4digit number which can be added to 7249 in order to make the derived number divisible by each of 12,14,21,33 and 54.

A 9123

B 9383

Correct Option

Solution: (B)

Solution: The LCM of the numbers 12, 14, 21, 33 and 54 is 8316. Hence, in order for the condition to be satisfied, we need to get the number as: $7249 + n = 8316 \times 2$
 $n = 9383$.

C 8727

D None of these

Q.5)

Subject: General Aptitude

Max Marks: 1

One year ago the ratio between Laxman's and Gopal's salary was 3 : 4. The ratios of their individual salaries between last year's and this year's salaries are 4 : 5 and 2 : 3 respectively. At present the total of their salary is ₹ 4160. The salary of Laxman, now is

A ₹ 1040

B ₹ 1600

Correct Option

Solution: (B)

Solution: Let the salaries of Laxman and Gopal one year before being L_1, G_1 respectively and now L_2, G_2 respectively.

Then, $\frac{L_1}{G_1} = \frac{3}{4}, \frac{L_2}{L_1} = \frac{4}{5}, \frac{G_2}{G_1} = \frac{2}{3}$ and $L_2 + G_2 = 4160$

Solving these equations, we get $L_2 = ₹1600$

C ₹ 2560

D ₹ 3120

Q.6)

Subject: General Aptitude

Max Marks: 1

The remainder when $2851 \times (2862)^2 \times (2873)^3$ is divided by 23 is

A 18

Correct Option

Solution: (A)

Solution: Using the remainder theorem, we find that the following expressions have the same remainder.

$$\begin{aligned} & \frac{2851 \times (2862)^2 \times (2873)^3}{23} \\ \Rightarrow & \frac{22 \times 10 \times 10 \times 21 \times 21 \times 21}{23} \\ \Rightarrow & \frac{22 \times 8 \times 441 \times 21}{23} \\ \Rightarrow & \frac{22 \times 21 \times 8 \times 4}{23} \\ \Rightarrow & \frac{462 \times 32}{23} \\ \Rightarrow & \frac{2 \times 6}{23} \\ \Rightarrow & \text{Remainder is 18.} \end{aligned}$$

B 17

C 10

D 5

Q.7)

Subject: General Aptitude

Max Marks: 1

Three pipes of varying diameters can fill the vessels of 1L, 2L and 3L in 4,18 and 48 min respectively. What is the ratio of their diameters? (Assume that the speed of the flow is the same in all cases.)

A 6:4:3

Correct Option

Solution: (A)

Solution: Volume per unit time = Area of cross section of pipe * Speed of the flow

Hence, $\frac{V}{T} \propto d^2$

$$d_1^2 : d_2^2 : d_3^2 = \frac{1}{4} : \frac{2}{18} : \frac{3}{48}$$

$$\Rightarrow d_1 : d_2 : d_3 = \frac{1}{2} : \frac{1}{3} : \frac{1}{4} = 6 : 4 : 3$$

B

3:4:5

C

6:5:4

D

None of these.

Q.8)

Subject: General Aptitude

Max Marks: 1

If $x = \sqrt{\sqrt{7} + 7 + \sqrt{8 + 2\sqrt{7}}} - \sqrt{7}$, the value of x, will be

A

 $\sqrt{7} - 1$

B

 $2\sqrt{7}$

C

1

Correct Option

Solution: (C)

$$\begin{aligned}\text{Solution: } x &= \sqrt{\sqrt{7} + 7 + \sqrt{8 + 2\sqrt{7}}} - \sqrt{7} \\ 8 + 2\sqrt{7} &= 7 + 1 + 2\sqrt{7} = (\sqrt{7} + 1)^2 \\ \text{Therefore, } x &= \sqrt{\sqrt{7} + 7 + (\sqrt{7} + 1)} - \sqrt{7} \\ &= \sqrt{8 + 2\sqrt{7}} - \sqrt{7} \\ &= (\sqrt{7} + 1) - \sqrt{7} = 1\end{aligned}$$

D

 $1 - \sqrt{7}$

Q.9)

Subject: General Aptitude

Max Marks: 1

Five bells first begin to toll together and then at intervals of 3,5,7,8 and 10s. Find after what interval they will again toll together. How many times do they toll together in one hour?

A

14min, 3times

B

12min, 4times

C

14min, 4times

Correct Option

Solution: (C)

Solution: Required time interval = LCM of 3, 5, 7, 8 and 10
 $= 840s$
 $= 14min$
 Number of times they will together in one hour $= \frac{60}{14} = 4times$ (ignoring the fraction part)

D

12min, 3times

Q.10)

Subject: General Aptitude

Max Marks: 1

GCD of $(x^2 - 4)$ and $(x^2 + x - 6)$ is

A

 $(x+2)$

B

 $(x-2)$

Correct Option

Solution: (B)

$$\begin{aligned}\text{Solution: } (x^2 - 4) &= (x - 2)(x + 2) \\ (x^2 + x - 6) &= (x + 3)(x - 2) \\ \text{GCD or HCF} &= (x - 2)\end{aligned}$$

C

 $(x^2 - 2)$

D

 $(x^2 + 2)$

Q.11)

Subject: General Aptitude

Max Marks: 2

The sum of the series: $\frac{1}{2} + \frac{1}{8} + \frac{1}{12} + \frac{1}{20} + \dots + \frac{1}{156} + \frac{1}{182} + \dots$ to infinity will be

A 1.1

B 1

Correct Option

Solution: (B)

Solution: The sum to infinite terms would tend to 1 because we would get $\frac{\text{infinity}}{\text{infinity}+1}$.

C $\frac{14}{13}$

D None of these

Q.12)

Subject: General Aptitude

Max Marks: 2

The least perfect square number which is divisible by 3,4,6,8,10 and 11 is:

A $2^3 * 3^2 * 5^2 * 11^2$

B $2^4 * 3^1 * 5^1 * 11^2$

C $2^4 * 3^2 * 5^2 * 11^2$

Correct Option

Solution: (C)

Solution: The number should have at least one 3, three 2's, one 5, and one 11 for it to be divisible by 3, 4, 6, 8, 10 and 11.

Further, each of the prime factors should be having an even power. Thus the correct answer will be : $2 * 2 * 2 * 2 * 3 * 3 * 5 * 5 * 11 * 11$

D $2^3 * 3^2 * 5^2 * 11^1$

Q.13)

Subject: General Aptitude

Max Marks: 2

Find the HCF of $(3^{125} - 1)$ and $(3^{35} - 1)$.

A $(3^5 - 1)$

Correct Option

Solution: (A)

Solution: Rule is the HCF of $(a^m - 1)$ and $(a^n - 1)$ is given by $(a^{\text{HCF of } m, n} - 1)$
Thus the answer is $(3^{\text{HCF of } 125, 35} - 1) = (3^5 - 1)$

B $(3^{10} - 1)$

C (3^5)

D $(3^{25} - 1)$

Q.14)

Max Marks: 2

A bag contains 25 paise, 50 paise and 1 Re. coins. There are 220 coins in all and the total amount in the bag is ₹ 160. If there are thrice as many 1 Re. coins as there are 25 paise coins, then what is the number of 50 paise coins?

A 60

Correct Option

Solution: (A)

Solution: The no. of coins of 1 Re = 3x and 25p = x.

Conventionally we can solve this using equations as follows:

$$A + B + C = 220 \quad (1)$$

$$A = 3C \quad (2)$$

$$A + 0.5B + 0.25C = 160 \quad (3)$$

We have a situation with 3 equations and 3 unknowns, and we can solve for

A (no. of 1 Re. coins),

B (no. of 50 paise coins)

and C (no. of 25 paise coins)

However, a much smarter approach would be to go through the options. If we check option (a) - no. of 50 paise coins = 60 we would get the number of 1 Re coins as 120 and the number of 25 paise coins as 40.

$$120 * 1 + 60 * 0.5 + 40 * 0.25 = 160$$

This fits the conditions perfectly and is hence the correct answer.

B

40

C

120

D

80

Q.15)

Subject: General Aptitude

Max Marks: 2



A set S is formed by including some of the first One thousand natural numbers. S contains the maximum number of numbers such that they satisfy the following conditions:

I.No number of the set S is prime.

II.When the numbers of the set S are selected two at a time, we always see co-prime numbers

What is the number of elements in the set S ?

A

11

B

12

Correct Option

Solution: (B)

Solution: We can take only perfect squares of odd numbers which are prime and one perfect square of an even number which is prime. Thus, for instance, we can take numbers like 1,4,9,25,49,121,169,289,361,529,841 and 961. A total of 12 such numbers can be taken.

C

13

D

7

close