



Aptitude Questions for SSC JE

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Instructions

For the following questions answer them individually

Question 1

The cost price of an article is 64% of the marked price. The gain percentage after allowing a discount of 12% on the market price is

- A 37.5%
- B 48%
- C 50.5%
- D 52%

Answer: A

Explanation:

Let's say marked price = 100

Then cost price = 64

and selling price = 88

discount = 24

%discount = $\frac{24}{64} \times 100 = 37.5\%$

Question 2

Product of two coprime numbers is 117. Then their LCM is

- A 9
- B 13
- C 39
- D 117

Answer: D

Explanation:

Let the two numbers be a,b.

Hence $a * b = \text{L.C.M}(a,b) * \text{G.C.D}(a,b)$

It is given that a,b are co-primes, implies $\text{G.C.D}(a,b) = 1$

Hence from the above equation we get $\text{L.C.M}(a,b) = a*b = 117$

Question 3

The H.C.F. and L.C.M. of, two numbers are 8 and 48 respectively. If one of the numbers is 24, then the other number is

- A 48
- B 36
- C 24
- D 16

Answer: D

Explanation:

Given:-

Numbers- First = 24

Second = x (suppose)

H.C.F. of numbers = 8

L.C.M. of numbers = 48

As we know:

H.C.F.* L.C.M. = Product of numbers

Hence

$$48*8 = 24*x$$

$$x = 16$$

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Question 4

The least among the fractions $\frac{15}{16}$, $\frac{19}{20}$, $\frac{24}{25}$, $\frac{34}{35}$ is

A $\frac{34}{35}$

B $\frac{15}{16}$

C $\frac{19}{20}$

D $\frac{24}{25}$

Answer: B

Explanation:

Given numbers can be resolved like $(1 - \frac{1}{16})$, $(1 - \frac{1}{20})$, $(1 - \frac{1}{25})$, $(1 - \frac{1}{35})$

hence smallest among them will be the one having maximum subtraction from 1.

so answer is $\frac{15}{16}$

Question 5

The L.C.M. of two different numbers are 30. Which of the following cannot be their H.C.F.?

A 12

B 15

C 6

D 10

Answer: A

Explanation:

Given LCM of two numbers is 30

Both numbers should be in the form of $30a$ and $30b$ where a and b are co-primes

In the following options 6, 10 and 15 are factors of 30 but not 12 and so 12 cannot be the HCF

Question 6

What is the mean of the given data?

23, 24, 25, 26, 27, 28, 29, 30, 31, 32

A 26.75

B 27.69

C 27.5

D 26.12

Answer: C

Explanation:

Given numbers are 23,24,25,26,27,28,29,30,31,32

Since this series is in Arithmetic Progression, Average of the series will be Average of the middle two numbers = $\frac{27 + 28}{2} = 27.5$

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Question 7

The ratio of the present ages of A and B is 8 : 15. Eight years ago, the ratio of their ages was 6 : 13. What will be the ratio of ages of A and B after 8 years from now?

- A 10:17
- B 5:8
- C 5:9
- D 9:14

Answer: A

Question 8

One year ago, the ratio of the age (in years) of A to that of B was 4 : 3. The ratio of their respective ages, 3 years from now, will be 6 : 5. What will be the ratio of respective ages of A and B, 9 years from now?

- A 7 : 6
- B 10 : 9
- C 9 : 8
- D 8 : 7

Answer: C

Explanation:

One year ago, the ratio of the age (in years) of A to that of B = 4 : 3

After 3 year, the ratio of the age (in years) of A to that of B = 6 : 5

After 3 year, let the age of A and B are 6x and 5x.

ATQ,
 $\frac{4x+4}{3x+4} = \frac{6}{5}$

$$20x + 20 = 18x + 24$$

$$2x = 4$$

$$x = 2$$

After 9 year, the ratio of the age (in years) of A to that of B = 6x + 6 : 5x + 6

$$6 \times 2 + 6 : 5 \times 2 + 6 = 18 : 16 = 9 : 8$$

Question 9

20% profit is made when a discount of 20% is given on the marked price. When the discount is 30% profit will be

- A 4%
- B 5%
- C 6%
- D 7.5%

Answer: B

Explanation:

Let C.P. = $100x$

$$\text{Profit} = \frac{20}{100} * 100x = 20x$$

$$\Rightarrow \text{S.P.} = 100x + 20x = 120x$$

Discount % = 20%

Let M.P. = y

$$\Rightarrow \frac{y-120x}{y} * 100 = 20$$

$$\Rightarrow 4y = 600x$$

$$\Rightarrow \text{M.P.} = 150x$$

$$\text{When 30% discount is given} \Rightarrow \frac{30}{100} * 150x = 45x$$

$$\Rightarrow \text{S.P.} = 150x - 45x = 105x$$

$$\Rightarrow \text{Profit \%} = \frac{105x-100x}{100x} * 100 = 5\%$$

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Question 10

If the cost price of 15 books is equal to the selling price of 20 books, the loss percent is:

- A 16
- B 20
- C 24
- D 25

Answer: D

Explanation:

Let's say selling price of 20 books equals to 100

hence selling price of 15 books will be 75

cost price of 15 books is = 100 (given)

so loss percentage is 25

Question 11

Two equal vessels are filled with the mixture of water and milk in the ratio of 3:4 and 5:3 respectively. If the mixtures are poured into a third vessel, the ratio of water and milk in the third vessel will be

- A 15:12
- B 53:59
- C 20:9
- D 59:53

Answer: D

Explanation:

Let's say amounts in first vessel are $3x$ and $4x$

in second vessel = $5y$ and $3y$

So $7x = 8y$ (given) (eq. (1))

Pouring them together, new amounts will be $3x+5y$ and $4x+3y$

so new ratio will be $\frac{3x+5y}{4x+3y}$ (eq. 2)

putting ratio of x and y from eq. (1) in eq. (2) and solving we will get new ratio as 59:53

Question 12

The third proportional to $\left(\frac{x}{y} + \frac{y}{x}\right)$ and $\sqrt{x^2 + y^2}$ is

- A xy
- B \sqrt{xy}
- C $3\sqrt{xy}$
- D $4\sqrt{xy}$

Answer: A

Explanation:

Let the third proportion be x.

$$\left(\frac{x}{y} + \frac{y}{x}\right) : \sqrt{x^2 + y^2} :: \sqrt{x^2 + y^2} : z$$

$$\left(\frac{x^2 + y^2}{xy}\right) : \sqrt{x^2 + y^2} :: \sqrt{x^2 + y^2} : z$$

$$\left(\frac{xy}{x^2 + y^2}\right) : 1 :: \frac{z}{\sqrt{x^2 + y^2}}$$

$$\left(\frac{xy}{x^2 + y^2}\right) :: \frac{z}{\sqrt{x^2 + y^2}}$$

$$z = xy$$

Option A is the correct answer.

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Question 13

Four runners started running simultaneously from a point on a circular track. They took 200 seconds, 300 seconds, 360 seconds and 450 seconds to complete the round. After how much time to they meet at the starting point for the first time?

- A 1800 seconds
- B 3600 seconds
- C 2400 seconds
- D 4800 seconds

Answer: A

Explanation:

Meeting at the first time will be L.C.M. of time taken by individuals to complete i.e. L.C.M. of 200,300,360 and 450 will be equal to 1800 sec.

Question 14

'x' number of men can finish a piece of work in 30 days. If there were 6 men more, the work could be finished in 10 days less. The original number of men is

- A 6
- B 10
- C 12

D 15

Answer: C

Explanation:

Let's say initial x number of people were there, hence in a day efficiency of 1 man will be = $\frac{1}{30x}$

For $x + 6$ same people efficiency of 1 man will be = $\frac{1}{20(x+6)}$

and both should be equal.

$$\frac{1}{30x} = \frac{1}{20(x+6)}$$

after solving it, we will get $x = 12$

Question 15

Two cars travel from city A to city B at a speed of 36 and 48 km/hr respectively. If one car takes 3 hours lesser time than the other car for the journey, then the distance between City A and City B is

A 518 km

B 432 km

C 648 km

D 346 km

Answer: B

Explanation:

Let the distance between City A and City B = d km

Speed of first car = 36 km/hr and speed of second car = 48 km/hr

Let time taken by first car = t hrs and time taken by second car = $(t - 3)$ hrs

Using, speed = distance/time for first car :

$$\Rightarrow \frac{d}{t} = 36$$

$$\Rightarrow d = 36t \text{-----(i)}$$

For second car, $\Rightarrow \frac{d}{t-3} = 48$

Substituting value of d from equation (i), we get :

$$\Rightarrow 36t = 48t - 144$$

$$\Rightarrow 48t - 36t = 12t = 144$$

$$\Rightarrow t = \frac{144}{12} = 12 \text{ hrs}$$

From equation (i), $\Rightarrow d = 36 \times 12 = 432$ km

\Rightarrow Ans - (B)

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