# UOT Quant Test

1. **A alone can do a piece of work in 6 days and B alone in 8 days. A and B undertook to do it for Rs. 3200. With the help of C, they completed the work in 3 days. How much is to be paid to C?**

**A.** Rs. 375

**B.** Rs. 400

**C.** Rs. 600

**D.** Rs. 800

**Answer:** Option **B**

**Explanation:**

C's 1 day's work = $\frac{1}{3} - \left(\frac{1}{6} + \frac{1}{8}\right) = \frac{1}{3} - \frac{7}{24} = \frac{1}{24}$.

A's wages : B's wages : C's wages = $\frac{1}{6} : \frac{1}{8} : \frac{1}{24} = 4 : 3 : 1$.

∴ C's share (for 3 days) = Rs. $\left(3 \text{ x } \frac{1}{24} \text{ x } 3200\right)$ = Rs. 400.

2. **If 6 men and 8 boys can do a piece of work in 10 days while 26 men and 48 boys can do the same in 2 days, the time taken by 15 men and 20 boys in doing the same type of work will be:**

**A.** 4 days

**B.** 5 days

**C.** 6 days

**D.** 7 days

**Answer:** Option **A**

**Explanation:**

Let 1 man's 1 day's work = $x$ and 1 boy's 1 day's work = $y$.

Then, $6x + 8y = \frac{1}{}$ and $26x + 48y = \frac{1}{}$.

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Solving these two equations, we get : $x = \frac{1}{100}$ and $y = \frac{1}{200}$.

(15 men + 20 boy)'s 1 day's work = $\left(\frac{15}{100} + \frac{20}{200}\right) = \frac{1}{4}$.

$\therefore$ 15 men and 20 boys can do the work in 4 days.

**3. The angle of elevation of a ladder leaning against a wall is 60° and the foot of the ladder is 4.6 m away from the wall. The length of the ladder is:**

**A.** 2.3 m

**B.** 4.6 m

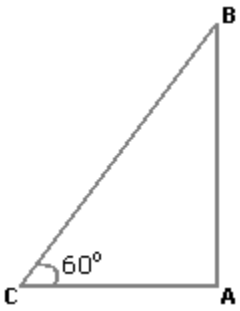
**C.** 7.8 m

**D.** 9.2 m

**Answer:** Option **D**

**Explanation:**

Let AB be the wall and BC be the ladder.




Then, $\angle ACB = 60°$ and AC = 4.6 m.

$\frac{AC}{BC} = \cos 60° = \frac{1}{2}$

$\Rightarrow$ BC = 2 x AC

= (2 x 4.6) m

= 9.2 m.

**4. How much time will it take for an amount of Rs. 450 to yield Rs. 81 as interest at 4.5% per annum of simple interest?**

**A.** 3.5 years

**B.** 4 years

**C.** 4.5 years

**D.** 5 years

**Answer:** Option **B**
**Explanation:**

Time = $\left(\frac{100 \text{ x } 81}{450 \text{ x } 4.5}\right)$years = 4 years.

**5. Reena took a loan of Rs. 1200 with simple interest for as many years as the rate of interest. If she paid Rs. 432 as interest at the end of the loan period, what was the rate of interest?**

**A.** 3.6

**B.** 6

**C.** 18

**D.** Cannot be determined

**E.** None of these

**Answer:** Option **B**
**Explanation:**

Let rate = R% and time = R years.

Then, $\left(\frac{1200 \text{ x } R \text{ x } R}{100}\right)$ = 432

$\Rightarrow 12R^2 = 432$

$\Rightarrow R^2 = 36$

$\Rightarrow R = 6.$

**6. A fruit seller had some apples. He sells 40% apples and still has 420 apples. Originally, he had:**

**A.** 588 apples

**B.** 600 apples

**C.** 672 apples

**D.** 700 apples

**Answer:** Option **D**

**Explanation:**

Suppose originally he had $x$ apples.

Then, (100 - 40)% of $x$ = 420.

$\Rightarrow \frac{60}{100} \times x = 420$

$\Rightarrow x = \left(\frac{420 \times 100}{60}\right) = 700.$

**7. Today is Monday. After 61 days, it will be:**

**A.** Wednesday

**B.** Saturday

**C.** Tuesday

**D.** Thursday

**Answer:** Option **B**

**Explanation:**

Each day of the week is repeated after 7 days.

So, after 63 days, it will be Monday.

$\therefore$ After 61 days, it will be Saturday.

**8. A grocer has a sale of Rs. 6435, Rs. 6927, Rs. 6855, Rs. 7230 and Rs. 6562 for 5 consecutive months. How much sale must he have in the sixth month so that he gets an average sale of Rs. 6500?**

**A.** Rs. 4991

**B.** Rs. 5991

**C.** Rs. 6001

**D.** Rs. 6991

**Answer:** Option **A**
**Explanation:**

Total sale for 5 months = Rs. (6435 + 6927 + 6855 + 7230 + 6562) = Rs. 34009.

∴ Required sale = Rs. [ (6500 x 6) - 34009 ]

= Rs. (39000 - 34009)

= Rs. 4991.

**9. The difference of two numbers is 1365. On dividing the larger number by the smaller, we get 6 as quotient and the 15 as remainder. What is the smaller number ?**

**A.** 240

**B.** 270

**C.** 295

**D.** 360

**Answer:** Option **B**
**Explanation:**
Let the smaller number be $x$. Then larger number = ($x$ + 1365).
∴ $x + 1365 = 6x + 15$
⇒ $5x = 1350$
⇒ $x = 270$

∴ Smaller number = 270.

**10. In one hour, a boat goes 11 km/hr along the stream and 5 km/hr against the stream. The speed of the boat in still water (in km/hr) is:**

**A.** 3 km/hr

**B.** 5 km/hr

**C.** 8 km/hr

**D.** 9 km/hr

**Answer:** Option **C**
**Explanation:**

Speed in still water = $\frac{1}{2}(11 + 5)$ kmph = 8 kmph.

**11. Excluding stoppages, the speed of a bus is 54 kmph and including stoppages, it is 45 kmph. For how many minutes does the bus stop per hour?**

**A.** 9

**B.** 10

**C.** 12

**D.** 20

**Answer:** Option **B**
**Explanation:**

Due to stoppages, it covers 9 km less.

Time taken to cover 9 km = $\left(\frac{9}{54} \text{ x } 60\right)_{\text{min}}$ = 10 min.

**12. A bank offers 5% compound interest calculated on half-yearly basis. A customer deposits Rs. 1600 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained by way of interest is:**

**A.** Rs. 120

**B.** Rs. 121

**C.** Rs. 122

**D.** Rs. 123

**Answer:** Option **B**

**Explanation:**

$$\text{Amount} = \text{Rs.} \left[ 1600 \text{ x } \left( 1 + \frac{5}{2 \text{ x } 100} \right)^2 + 1600 \text{ x } \left( 1 + \frac{5}{2 \text{ x } 100} \right) \right]$$

$$= \text{Rs.} \left[ 1600 \text{ x } \frac{41}{40} \text{ x } \frac{41}{40} + 1600 \text{ x } \frac{41}{40} \right]$$

$$= \text{Rs.} \left[ 1600 \text{ x } \frac{41}{40} \left( \frac{41}{40} + 1 \right) \right]$$

$$= \text{Rs.} \left[ \frac{1600 \text{ x } 41 \text{ x } 81}{40 \text{ x } 40} \right]$$

$$= \text{Rs. } 3321.$$

$\therefore$ C.I. = Rs. (3321 - 3200) = Rs. 121

**13. A, B, C subscribe Rs. 50,000 for a business. A subscribes Rs. 4000 more than B and B Rs. 5000 more than C. Out of a total profit of Rs. 35,000, A receives:**

**A.** Rs. 8400

**B.** Rs. 11,900

**C.** Rs. 13,600

**D.** Rs. 14,700

**Answer:** Option **D**

**Explanation:**

Let C = $x$.

Then, B = $x$ + 5000 and A = $x$ + 5000 + 4000 = $x$ + 9000.

So, $x + x + 5000 + x + 9000 = 50000$

$\Rightarrow 3x = 36000$

$\Rightarrow x = 12000$

A : B : C = 21000 : 17000 : 12000 = 21 : 17 : 12.

$\therefore$ A's share = Rs. $\left( 35000 \text{ x } \frac{21}{50} \right)$ = Rs. 14,700.

**14. Three partners shared the profit in a business in the ratio 5 : 7 : 8. They had partnered for 14 months, 8 months and 7 months respectively. What was the ratio of their investments?**

**A.** 5 : 7 : 8

**B.** 20 : 49 : 64

**C.** 38 : 28 : 21

**D.** None of these

**Answer:** Option **B**

**Explanation:**

Let their investments be Rs. $x$ for 14 months, Rs. $y$ for 8 months and Rs. $z$ for 7 months respectively.

Then, $14x : 8y : 7z = 5 : 7 : 8$.

Now, $\frac{14x}{8y} = \frac{5}{7} \Leftrightarrow 98x = 40y \Leftrightarrow y = \frac{49}{20}x$

And, $\frac{14x}{7z} = \frac{5}{8} \Leftrightarrow 112x = 35z \Leftrightarrow z = \frac{112}{35}x = \frac{16}{5}x.$

$\therefore x : y : z = x : \frac{49}{20}x : \frac{16}{5}x = 20 : 49 : 64.$

**15. Seats for Mathematics, Physics and Biology in a school are in the ratio 5 : 7 : 8. There is a proposal to increase these seats by 40%, 50% and 75% respectively. What will be the ratio of increased seats?**

**A.** 2 : 3 : 4

**B.** 6 : 7 : 8

**C.** 6 : 8 : 9

**D.** None of these

**Answer:** Option **A**

**Explanation:**

Originally, let the number of seats for Mathematics, Physics and Biology be $5x$, $7x$ and $8x$ respectively.

Number of increased seats are (140% of $5x$), (150% of $7x$) and (175% of $8x$).

$\Rightarrow \frac{140}{} \times 5x , \frac{150}{} \times 7x$ and $\frac{175}{} \times 8x$

$\left(\begin{matrix}100\\ \end{matrix}\right)$ $\left(\begin{matrix}100\\ \end{matrix}\right)$ $\left(\begin{matrix}100\\ \end{matrix}\right)$

$\Rightarrow 7x, \frac{21x}{2}$ and $14x$.

$\therefore$ The required ratio $= 7x : \frac{21x}{2} : 14x$

$\Rightarrow 14x : 21x : 28x$

$\Rightarrow 2 : 3 : 4.$