

Sample QuEST Global Placement Paper

Q1. The ratio of marks obtained by Vinod and Basu is 6:5. If the combined average of their percentage is 68.75 and their sum of the marks is 275, find the total marks for which exam was conducted.

Solution:

Let Vinod marks be $6x$ and Basus is $5x$. Therefore, the sum of the marks = $6x + 5x = 11x$.

But the sum of the marks is given as $275 = 11x$. We get $x = 25$ therefore, Vinod marks is $6x = 150$ and Basu marks = $5x = 125$.

Therefore, the combined average of their marks = $(150 + 125) / 2 = 137.5$.

If the total mark of the exam is 100 then their combined average of their percentage is 68.75

*Therefore, if their combined average of their percentage is 137.5 then the total marks would be $(137.5 / 68.75) * 100 = 200$.*

Q2) If the cost price of 20 articles is equal to the selling price of 16 articles, What is the percentage of profit or loss that the merchant makes?

Solution:

Let Cost price of 1 article be Re.1.

Therefore, Cost price of 20 articles = Rs. 20.

Selling price of 16 articles = Rs. 20

*Therefore, Selling price of 20 articles = $(20/16) * 20 = 25$*

Profit = Selling price – Cost price

= $25 - 20 = 5$

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*Percentage of profit = Profit / Cost price * 100.
= 5 / 20 * 100 = 25% Profit*

Q3. A candidate who gets 20% marks fails by 10 marks but another candidate who gets 42% marks gets 12% more than the passing marks. Find the maximum marks.

Solution:

Let the maximum marks be x.

From the given statement pass percentage is 42% - 12% = 30%

By hypothesis, 30% of x - 20% of x = 10 (marks)

i.e., 10% of x = 10

Therefore, x = 100 marks.

Q4. When processing flower-nectar into honeybees extract, a considerable amount of water gets reduced. How much flower-nectar must be processed to yield 1kg of honey, if nectar contains 50% water, and the honey obtained from this nectar contains 15% water?

Solution:

Flower-nectar contains 50% of non-water part.

In honey this non-water part constitutes 85% (100-15).

Therefore 0.5 X Amount of flower-nectar = 0.85 X Amount of honey = 0.85 X 1 kg

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*Therefore amount of flower-nectar needed = $(0.85/0.5) * 1\text{kg} = 1.7\text{ kg}$.*

Q5. A man can row 50 km upstream and 72 km downstream in 9 hours. He can also row 70 km upstream and 90 km downstream in 12 hours. Find the rate of current.

Solution:

Let x and y be the upstream and downstream speed respectively.

Hence $50/x + 72/y = 9$ and $70/x + 90/y = 12$

Solving for x and y we get $x = 10\text{ km/hr}$ and $y = 18\text{ km/hr}$

*We know that Speed of the stream = $1/2 * (\text{downstream speed} - \text{upstream speed}) = 1/2 (18 - 10) = 4\text{ km/hr}$.*

Q6. How long will it take for a sum of money to grow from Rs.1250 to Rs.10,000, if it is invested at 12.5% p.a simple interest?

Solution:

Simple interest is given by the formula $SI = (pnr/100)$, where p is the principal, n is the number of years for which it is invested, r is the rate of interest per annum

In this case, Rs. 1250 has become Rs.10,000.

Therefore, the interest earned = $10,000 - 1250 = 8750$.

*$8750 = [(1250 * n * 12.5) / 100]$*

$\Rightarrow n = 700 / 12.5 = 56\text{ years}$.

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Q7) The time in a clock is 20 minute past 2. Find the angle between the hands of the clock.

Solution:

Time is 2:20. Position of the hands: Hour hand at 2 (nearly).

Minute hand at 4

*Angle between 2 and 4 is 60 degrees $[(360/12) * (4-2)]$*

Angle made by the hour hand in 20 minutes is 10 degrees, since it turns through $\frac{1}{2}$ degrees in a minute.

Therefore, angle between the hands is 60 degrees – 10 degrees = 50 degrees

Q8. A man buys an article for Rs. 27.50 and sells it for Rs. 28.60. Find his gain percent.

Solution:

C.P. = Rs.27.50, S.P. = Rs. 28.60.

Therefore Gain = Rs. (28.60 – 27.50) = Rs.1.10.

*Therefore Gain % = $(1.10*100/27.50)$ % = 4%.*

9)Find S.P., when:

(i) C.P. = Rs. 56.25, gain = 20%.

(ii) C.P. = Rs. 80.40, loss = 15%.

Solution:

*(i) S.P. = 120% of Rs. 56.25 = Rs. $(120*56.25/100)$ = Rs. 67.50.*

*(ii) S.P. = 85% of Rs. 80.40 = Rs. $(85*80.40/100)$ = Rs. 68.34.*

Q10. A scooterist covers a certain distance at 36 kmph. How many meters does he cover in 2 min?

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Solution:

$$\text{Speed} = 36 \text{ kmph} = 36 * 5/18 = 10\text{mps}$$

$$\text{Therefore, Distance covered in 2 min} = (10 * 2 * 60)\text{m} = 1200\text{m}$$