Quiz Date: 28th April 2020

Q1. Two casks of 48 L and 42 L are filled with mixtures of wine and water, the proportions in the two casks being respectively 13 : 7 and 18 : 17. If the contents(wine and water) of the two casks be mixed and 20 L of water is added to this mixture then what will be the proportion of wine to water in the resultant solution?
(a) 21 : 31
(b) 12 : 13
(c) 13 : 12
(d) 12 : 17
(e) 31 : 21

Q2. I have to reach a certain place at a certain time and I find that, if I walk at 4 km per hour I will be late by 15min and if I walk at 6 km per hour I will reach 10 min earlier. Then find How far I have to walk?
(a) 25 km
(b) 5 km
(c) 10 km
(d) 7 km
(e) 9 km

Q3. Pankaj walked at 5 km/h for certain part of the journey and then he took an auto for the remaining part of the journey and travelling at 25 km/h. He took 10 hours for the entire journey, then find what part of journey did he travelled by auto if the average speed of the entire journey be 17 km/h:
(a) 750 km
(b) 100 km
(c) 150 km
(d) 200 km
(e) 250 km

Q4. Rohit, Harsha and Sanjeev are three typists who working simultaneously can type 216 pages in four hours. In one hour Sanjeev can type as many pages more than Harsha as Harsha can type more than Rohit, During a period of five hours Sanjeev can type as many pages as Rohit can during seven hours. How many pages does each of them type per hour?
(a) 16, 18, 22
(b) 14, 17, 20
(c) 15, 17, 22
(d) 15, 18, 21
(e) None of these

Q5. According to a plan, a drilling team had to drill to a depth of 270 metres below the ground level. For the first three days the team drilled as per the plan. However, subsequently finding that their resources were getting underutilized according to the plan, it started to drill 8 metres more than the plan every day. Therefore, a day before the planned date they had drilled to the depth of 280 metres. How many metres of drilling was the plan for each day ?

(a) 38 metres
(b) 30 metres
(c) 27 metres
(d) 28 metres
(e) 24 metres

Q6. In an election between 2 candidates, 75% of the voters cast their votes, out of which 2% votes were declared invalid. A candidate got 9261 votes which were 75% of the valid votes. The total number of voters enrolled in the election was:
(a)16000
(b)16400
(c)16800
(d)18000
(e)18600

Q7. Mr. X a businessman, had the income in the years 1995, such that he earned a profit of 20% on his investment in the business. In the year 1996 his investment was less by Rs. 5000 but still had the same income (income = investment + profit) as that in 1995. Thus the percentage value of profit earned in 1996 increased by 6 than that in 1995. What was his investment in 1995?
(a) Rs. 1,02,000
(b) Rs. 1,50,500
(c) Rs. 1,05,000
(d) Rs. 1,30,500
(e) None of these

Q8. Rashmi had Rs. 4200. She invested some of it in scheme A for 4 years and rest of the money she invests in scheme B for two years. Scheme A offers simple interest at a rate of 22% p.a. and scheme B offers compound interest (compounded annually) at a rate of 10% p.a. if the interest received from Scheme A is Rs. 1516 more than the interest received from Scheme B, what was the sum invested by her in scheme A?
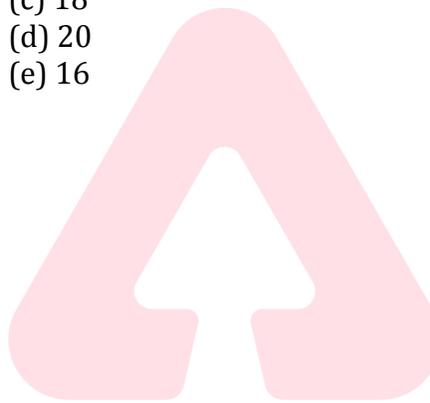(a) Rs. 2,600
(b) Rs. 2,000
(c) Rs. 2,200
(d) Rs. 2,400
(e) Rs. 1800

Q9. There are two alloys of gold, silver and platinum. The first alloy is known to contain 40 percent of platinum and the second alloy 26 percent of silver. The percentage of gold is the same in both alloys. Having alloyed 150 kg of the first alloy and 250 kg of the second, we get a new alloy that contains 30 percent of gold. How many kilograms of platinum is there in the new alloy?
(a) 170 kg
(b) 175 kg
(c) 160 kg
(d) 165 kg
(e) 180 kg

Q10. A bag contains a total of 95 coins of Rs. 1, 50p and 25p denominations. Find the total number of coins of Re 1 if there are a total of 50.5 rupees in the bag and it is known that the number of 25 paise coins are 33.33% more than the number of 1 rupee coins.
(a) 56
(b) 25
(c) 18
(d) 20
(e) 16

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Solutions

S1. Ans.(b)
Sol.
Required ratio

$$\frac{\frac{13}{20} \times 48 + \frac{18}{35} \times 42}{\left(\frac{7}{20} \times 48 + \frac{17}{35} \times 42\right) + 20}$$

$$= \frac{\frac{156}{5} + \frac{108}{5}}{\frac{84}{5} + \frac{102}{5} + 20}$$

$$= \frac{264}{286}$$

$$= 12 : 13$$

S2. Ans.(b)
Sol.
Let the correct time taken in the journey is t hours.

$$\therefore 4 \times \left(t + \frac{15}{60}\right) = 6 \times \left(t - \frac{10}{60}\right)$$
$$\Rightarrow 4t + 1 = 6t - 1$$
$$\Rightarrow t = 1 \text{ hour}$$
$\therefore$ Total distance walked by me
$$= 4 \times \left(1 + \frac{1}{4}\right)$$
$$= 5 \text{ km}$$

S3. Ans.(c)
Sol.
Let time taken by Pankaj during walking be t hours
$\therefore$ 5t + 25 [10 - t] = 17 × 10
$\Rightarrow$ 20t = 80
$\Rightarrow$ t = 4 hours
$\therefore$ Part of journey travelled by auto
= 25 × 6
= 150 km

S4. Ans.(d)
Sol.
Ratio of efficiencies of Sanjeev and Rohit = 7 : 5
Let efficiency of Sanjeev = 7a
and that of Rohit = 5a
$\therefore$ ATQ, Efficiency of Harsha
$$= \frac{7a + 5a}{2}$$
= 6a
$\therefore$ Ratio of efficiency of Rohit, Harsha,
Sanjeev = 5 : 6 : 7
$\therefore$ No. of pages typed by Rohit per hour
$$= \frac{5}{18} \times \frac{216}{4} = 15$$
by Harsha $= \frac{6}{18} \times \frac{216}{4}$
                = 18 pages
by Sanjeev $= \frac{7}{18} \times \frac{216}{4}$
                = 21 pages

S5. Ans.(b)

Sol.
Let plan was to drill x metre per day and total time (days) to drill the required depth according to plan was t days.

$\therefore$ xt = 270 ...(i)

and A/c,

3x + (t – 4) (x + 8) = 280

$\Rightarrow$ 8t – x = 42 ...(ii)

From (i) and (ii)

Put $t = \dfrac{270}{x}$ in (ii)

$\dfrac{2160}{x} - x = 42$

$\Rightarrow x^2 + 42x - 2160 = 0$

$\Rightarrow (x - 30)(x + 72) = 0$
      $\checkmark$ $\times$

$\Rightarrow$ x = 30 metres

S6. Ans(c)
Sol.
Let total number of voters $= x$

Voters who cast their votes $= 0.75x$

Valid votes polled $= 0.98 \times 0.75x$

Valid votes polled for a candidate

$9261 = 0.98 \times 0.75 \times 0.75 \times x$

$x = 16800$

S7. Ans.(c)
Sol.
Let his investment in 1995 was Rs. 100x

$\therefore$ Income in 1995 = 100x + 20x = 120x

Investment in 1996 = (100x – 5000)

$\therefore$ Income in 1996 = $(100x - 5000) \times \dfrac{126}{100}$

ATQ,

$120x = (100x - 5000) \times \dfrac{126}{100}$

$\Rightarrow$ x = 1,050

$\therefore$ Investment in 1995 = Rs. 1,05,000

S8. Ans.(c)
Sol.

Let investment made by Rashmi in scheme A= Rs. x

∴ Investment made by her in scheme B = (4200 – x)

ATQ,

$$\frac{x \times 22 \times 4}{100} - (4200 - x)\left[\left(1 + \frac{10}{100}\right)^2 - 1\right] = 1516$$

$$\Rightarrow \frac{88x}{100} - \frac{(4200 - x) \times 21}{100} = 1516$$

$$\Rightarrow 109x - 88,200 = 1,51,600$$

$$\Rightarrow x = 2200$$

S9. Ans.(a)

Sol.

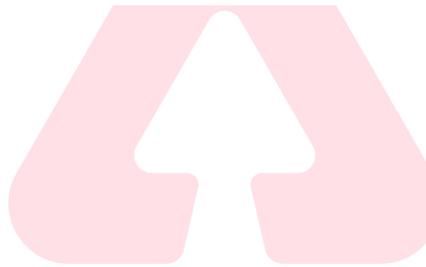Total gold in mixture = $(150 + 250) \times \frac{30}{100} = 120$ kg

Gold in Second alloy $= \frac{250 \times 30}{100} = 75$ kg

Silver in second alloy $= 250 \times \frac{26}{100} = 65$ kg

Platinum in second alloy = 250 – 75 – 65 = 110 kg

Platinum in first alloy = $150 \times \frac{40}{100} = 60$ kg

Total platinum in mixture = 110 + 60 = 170 kg

S10. Ans.(c)

Sol.

Let the number of one rupee coins = $3x$

Then no. of 25 paise coins = $3x \times (1.333) = 4x$

Let the no. of 50 paise coins = Y

ATQ,

$3x + Y + 4x = 95$

$7x + Y = 95$ ....(i)

And

$3x \times (1) + 0.5 \times Y + 0.25 \times 4x = 50.5$

$3x + 0.5Y + x = 50.5$ ....(ii)

From (i) and (ii)

We get $x = 6$

Required answer = 6 × 3 = 18 Ans.

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