

Quiz Date: 16th April 2020

Q1. A started a work and left after working for 2 days. Then B was called and he finished the remaining work in 9 days. Had A left the work after working for 3 days, B would have finished the remaining work in 6 days. In how many days they will finish the whole work working together?

- (a) 5 days
- (b) $3\frac{3}{4}$ days
- (c) $6\frac{2}{3}$ days
- (d) $4\frac{2}{3}$ days
- (e) $4\frac{3}{4}$ days

Q2. The ratio of efficiencies of A, B and C is 2 : 3 : 4. While A and C work on alternate days and B work for all days. Now the work completed in total 10 days and total amount they get is Rs. 1200. Find the amount of each person respectively.

- (a) Rs. 200, Rs. 600, Rs. 400
- (b) Rs. 500, Rs. 500, Rs. 200
- (c) Rs. 600, Rs. 400, Rs. 200
- (d) Rs. 400, Rs. 200, Rs. 600
- (e) Rs. 450, Rs. 150, Rs. 600

Q3. A pipe can fill a cistern in 12 min and another pipe can fill it in 15 min but a third pipe can empty it in 6 minutes. The first two pipes are kept open for 5 minutes in the beginning and then the third pipe is also opened. Time taken to empty the cistern is:

- (a) 38 minutes
- (b) 22 minutes
- (c) 42 minutes
- (d) 45 minutes
- (e) 60 minutes

Q4. Karan and Arjun run a 100 metre race, where Karan beats Arjun by 10 metre. To do a favour to Arjun, Karan starts 10 metre behind the starting line in a second 100 metre race. They both run at their earlier speeds. Which of the following is true in connection with the second race?

- (a) Karan beats Arjun By 1 metre
- (b) Arjun beats Karan By 1 metre
- (c) Karan beats Arjun reaches at same time
- (d) Karan beats Arjun By 10 metre
- (e) None of these

Q5. An alloy contains only zinc and copper. One such alloy weighing 15 gm contains zinc and copper in the ratio of 2 : 3 by weight. If 10 gm of zinc is added then find what amount of

copper has to be removed from the alloy such that the final alloy has zinc and copper in the ratio of 4 : 1 by weight?

- (a) 5 gm
- (b) 5.5 gm
- (c) 6 gm
- (d) 4.8 gm
- (e) 6.4 gm

Q6. A, B and C start a business in partnership with initial investments of Rs. 4200, Rs. 3600 and Rs. 2400 respectively. After 4 months from the start of the business, A invests an additional amount of Rs. 1000 in the business. After 6 months from the start of the business B and C invest additional amounts in the respective ratio 1 : 2. After 10 months they get a total profit of Rs. 2820. If the share of A in profit be Rs. 1200, what was the additional investment made by B ?

- (a) Rs. 600
- (b) Rs. 400
- (c) Rs. 800
- (d) Rs. 450
- (e) Rs. 500



Q7. A and B together can do a piece of work in 16 days and B and C can do the same work in 24 days. From starting A and B worked for 4 days and 7 days respectively and remaining work is completed by C in 23 days, then find in how many days will C complete the work alone?

- (a) 32 days
- (b) 16 days
- (c) 8 days
- (d) 24 days
- (e) 36 days

Q8. In a horse race there were 18 horses numbered 1-18. The probability that horse 1 would win is $\frac{1}{6}$, that 2 would win is $\frac{1}{10}$ and that 3 would win is $\frac{1}{8}$. Assuming that a tie is impossible, find the chance that one of the three will win.

- (a) $\frac{47}{120}$
- (b) $\frac{119}{120}$
- (c) $\frac{11}{129}$

- (d) 143/480
(e) 1/5

Q9. The petrol prices shot up by 7% as a result of the hike in the price of crudes. The price of petrol before the hike was Rs 28 per litre. Shubham travels 2400 kilometres every month and his car gives a mileage of 18 kilometres to a litre. Find the increase in the expenditure that Shubham has to incur due to the increase in the price of petrol (to the nearest rupee)?

- (a) Rs 270
(b) Rs 262
(c) Rs 276
(d) Rs 272
(e) Rs.267

Q10. Two Indian tourists in the US cycled towards each other, one from point A and the other from point B. The first tourist left point A 6 hrs later than the second left point B, and it turned out on their meeting that he had travelled 12 km less than the second tourist. After their meeting, they kept cycling with the same speed, and the first tourist arrived at B 8 hours later and the second arrived at A 9 hours later after they meet. Find the speed of the faster tourist.

- (a) 4 km/hr
(b) 6 km/hr
(c) 9 km/hr
(d) 2 km/hr
(e) 7 km/hr

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Directions (11-15): Find the approximate value of given question:

Q11. $624.89 + (31.89)^2 - 49.01 = (?)^2$

- (a) 35
(b) 40
(c) 36
(d) 44
(e) 46

Q12. $\frac{163.98+?}{24.98} + 389.97 + 19.98\% \text{ of } 724.89 = 24.98\% \text{ of } 2203.89$

- (a) 206
(b) 216
(c) 240
(d) 236
(e) 246

Q13. $?% \text{ of } 749.89 + \sqrt[3]{728.89} = 26.89\% \text{ of } 499.87 + 29.89\% \text{ of } 349.89 + \sqrt{80.87}$

- (a) 38
(b) 32
(c) 40
(d) 42
(e) 28

Q14. $(11.97)^2 + 12.493 \times 16.08 - \sqrt{13224.98} - (?)^2 = (14.96)^2$

- (a) 9
(b) 2
(c) 8
(d) 5
(e) 10

Q15. $\frac{359.93}{?} = (8.94)^3 - 14.5 \times 39.89 + (1.98)^2 - 3^4$

- (a) 8
(b) 2
(c) 3
(d) 9
(e) 5



Solutions

S1. Ans.(b)

Sol. Let a takes x days and B takes y days to finish the work individually.

$$\frac{2}{x} + \frac{9}{y} = 1 \dots\dots\dots(i)$$

And,

$$\frac{3}{x} + \frac{6}{y} = 1 \dots\dots\dots(ii)$$

Solving (i) and (ii) we get

$$x = 5 \text{ days}$$

$$y = 15 \text{ days}$$

$$\therefore \text{Time taken by both to complete the whole work together} = \frac{5 \times 15}{20}$$

$$= 3 \frac{3}{4} \text{ days}$$

S2. Ans.(a)

Sol. Ratio of work done by all of them i.e. by A, B and C respectively.

$$= 2 \times 5 : 3 \times 10 : 4 \times 5$$

$$= 1 : 3 : 2$$

$$\therefore \text{Amount of A} = \frac{1}{6} \times 1200 = \text{Rs. } 200$$

$$\text{Amount of B} = \frac{3}{6} \times 1200 = \text{Rs. } 600$$

$$\text{Amount of C} = \frac{2}{6} \times 1200 = \text{Rs. } 400$$

S3. Ans.(d)

$$\text{Sol. 5 minute work of both filling pipes} = \frac{5}{12} + \frac{5}{15} = \frac{3}{4}$$

$$\text{One minute work of all the three pipes} = \frac{1}{12} + \frac{1}{15} - \frac{1}{6} = -\frac{1}{60}$$

Let in x min. the cistern is empty.

$$\therefore \frac{3}{4} + \left(-\frac{1}{60}\right)x = 0$$

$$\Rightarrow \frac{x}{60} = \frac{3}{4}$$

$$\Rightarrow x = 45 \text{ min.}$$

S4. Ans.(a)

Sol.

Let Karan's speed = x m/sec

Arjun's speed = y m/sec

$$\therefore \frac{100}{x} = \frac{90}{y}$$

$$\Rightarrow x = \frac{10}{9}y$$

$$\therefore \text{Ratio of their speeds} = 10 : 9$$

In second race, Karan will run 110 metre while Arjun will run 99 metre.

\therefore Karan beats Arjun by 1 m in second race.

S5. Ans.(a)

$$\text{Sol. 1st alloy zinc} = \frac{2}{5} \times 15 = 6$$

$$\text{Copper} = \frac{3}{5} \times 15 = 9$$

Let copper to be removed = x

Then,

$$\frac{6 + 10}{9 - x} = \frac{4}{1}$$

$$\Rightarrow 16 = 36 - 4x$$

$$\Rightarrow x = 5 \text{ gm}$$

S6. Ans.(b)

Sol.

Let B invests additional amount of Rs. x and C Rs. $2x$ respectively.

(A's profit) : (B's profit) : (C's profit)

$$= [4200 \times 4 + 5200 \times 6] : [3600 \times 6 + (3600 + x) \times 4] : [2400 \times 6 + (2400 + 2x) \times 4]$$

$$= 12000 : (9000 + x) : (6000 + 2x)$$

$$\therefore \text{A's profit} = \frac{12000}{27000 + 3x} \times 2820$$

$$\Rightarrow 27000 + 3x = \frac{12000}{1200} \times 2820$$

$$\Rightarrow x = \text{Rs.}400$$

S7. Ans.(a)

Sol.

Let no. of days taken by A, B and C to complete the given work alone be a, b and c respectively.

$$\therefore \frac{1}{a} + \frac{1}{b} = \frac{1}{16} \quad \dots (i)$$

$$\frac{1}{b} + \frac{1}{c} = \frac{1}{24} \quad \dots (ii)$$

and,

$$\frac{4}{a} + \frac{7}{b} + \frac{23}{c} = 1 \quad \dots (iii)$$

Solving equation (i), (ii) and (iii) we get

c = 32 days

S8. Ans.(d)

Sol.

Required probability

$$= \frac{1}{6} \times \frac{9}{10} \times \frac{7}{8} + \frac{5}{6} \times \frac{1}{10} \times \frac{7}{8} + \frac{5}{6} \times \frac{9}{10} \times \frac{1}{8}$$

$$= \frac{63 + 35 + 45}{480} = \frac{143}{480}$$

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S9. Ans.(b)

Sol.

Original price of petrol (per litre) = Rs 28

New price of petrol (per litre) = $28 \times \frac{107}{100}$

= 29.96 rupee

Total petrol consumed by Subham's car

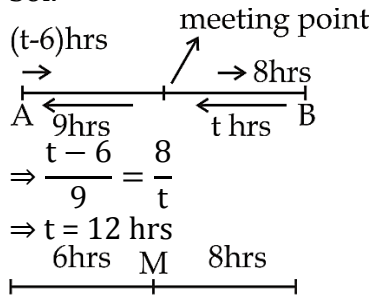
$$= \frac{2400}{18} = \frac{400}{3} \text{ li}$$

\therefore Increment in expenditure = $\frac{400}{3} \times (29.96 - 28)$

\approx Rs 262

S10. Ans.(b)

Sol.



$$\text{Ratio of time} = \frac{14}{21} = \frac{2}{3} = 2 : 3$$

$$\therefore \text{Ratio of speed} = 3 : 2$$

\downarrow \downarrow
 3x 2x

ATQ,

$$12 \times 2x = 12 + 6 \times 3x$$

$$\Rightarrow x = 2$$

$$\Rightarrow \text{speed of faster tourist} = 3 \times 2 = 6 \text{ kmph}$$

S11. Ans.(b)

Sol.

$$(?)^2 = 625 + (32)^2 - (7)^2$$

$$(?)^2 = 625 + 1024 - 49$$

$$(?)^2 = 1600$$

$$? = 40$$

S12. Ans.(d)

Sol.

$$\frac{164+?}{25} + 390 + 20\% \text{ of } 725 = \frac{25}{100} \times 2204$$

$$\frac{164+?}{25} + 535 = 551$$

$$? = (551 - 535) \times 25 - 164$$

$$? = 400 - 164$$

$$? = 236$$

S13. Ans.(b)

Sol.

$$\frac{?}{100} \times 750 + \sqrt{729} = \frac{27}{100} \times 500 + \frac{30}{100} \times 350 + \sqrt{81}$$

$$7.5? + 9 = 135 + 105 + 9$$

$$? = 32$$

S14. Ans.(b)

Sol.

$$(12)^2 + 12.5 \times 16 - \sqrt{13225} - (?)^2 = (15)^2$$

$$144 + 200 - 115 - (?)^2 = 225$$

$$(?)^2 = 229 - 225$$

$$? = 2$$

S15. Ans.(e)

Sol.

$$\frac{360}{?} = (9)^3 - 14.5 \times 40 + (2)^2 - 81$$

$$\frac{360}{?} = 729 - 580 + 4 - 81$$

$$? = \frac{360}{72}$$

$$? = 5$$

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