

Quantitative Aptitude Questions Paper with Solution

Directions (1-5): Rahul goes to gym and runs 40 minutes on treadmill. For starting 15 minutes he runs at a uniform speed of 5 km/hr and after that he runs at a uniform speed of 9km/hr for remaining time. He runs total (A) km on treadmill. After that he comes to his house and get ready for office which is 45km away from his house. He reaches office in 1.5 hours at 9:30 a.m.

In office he gives some work to his subordinates P_1 and P_2 at (B). P_1 can complete that work in 6 hours while efficiency of P_1 and P_2 is in the ratio 5 : 4. P_1 and P_2 together completes 75% of that work at 12:30 p.m. Rahul and P_2 together can complete same work in 3 hours. Rahul is (C)% more efficient than P_1 . After that work he comes back to home in upstream (Speed of stream is 3km/hr and his speed in still water and distance between his house and office are same as earlier). He takes (D) hours to reach home. When he reaches home, two of his friends Aman and Raman come at his house. All three starts to play a game in which 2 dices are used by each person. (E) is the number of outcomes in which first Rahul and then Aman throw their respective dices. In a game, all three throw their dices and each one of them get 8 as the sum of numbers in their dices and any one of two not get same outcomes. Winner is the one who gets highest number as the sum of the square of the number comes in dices. (F) should be the outcomes of the dices of Raman if Raman is winner of the game.

Q1. What value will come at the place of 'A'?

- (a) 4.25 km
- (b) 3.75 km
- (c) 5 km
- (d) 5.25 km
- (e) None of the given options

Q2. What value will come at the place of 'B'?

- (a) 10:45 a.m.
- (b) None of the given options
- (c) 11 a.m.
- (d) 10:30 a.m.
- (e) 10 a.m.

Q3. What value will come at the place of 'C'?

- (a) $16\frac{2}{3}\%$
- (b) 20%
- (c) 25%
- (d) $33\frac{1}{3}\%$
- (e) 50%

Q4. What value will come at the place of 'D'?

- (a) 2 hours
- (b) 1.5 hours
- (c) $1\frac{7}{8}$ hours
- (d) $1\frac{2}{3}$ hours
- (e) $1\frac{4}{11}$ hours

Q5. What value will come at the place of 'E'?

- (a) 72
- (b) 42
- (c) 36
- (d) 108
- (e) 54

Q6. What value will come at the place of 'F'?

- (a) None of the given options
- (b) Cannot be determined
- (c) 3 and 5
- (d) 4 and 4
- (e) 2 and 6

Q7. If length of a rectangle is decreased by 6 cm we get a square and the area of square formed is 252 cm^2 less than the area of square formed when breadth of the original rectangle is increased by 6 cm. Find the perimeter of the rectangle.

- (a) 42 cm
- (b) 88 cm
- (c) 80 cm
- (d) 84 cm
- (e) 72 cm

Q8. Breadth of a rectangle is equal to the diagonal of the square whose side is $2.5\sqrt{2}$ cm. Ratio between length and breadth of rectangle is 3 : 1. Find the area of the rectangle (in cm^2).

- (a) 125
- (b) 75
- (c) 90
- (d) 100
- (e) 115

Q9. Equal distance is covered by a boat in upstream and in downstream in total 5 hours. Sum of speed of a boat in upstream and downstream is 40 km/hr. Speed of boat in still water is 600% more than the speed of stream. Find the approximate distance covered by boat in downstream (in km).

- (a) 40
- (b) 35
- (c) 55
- (d) 59
- (e) 50

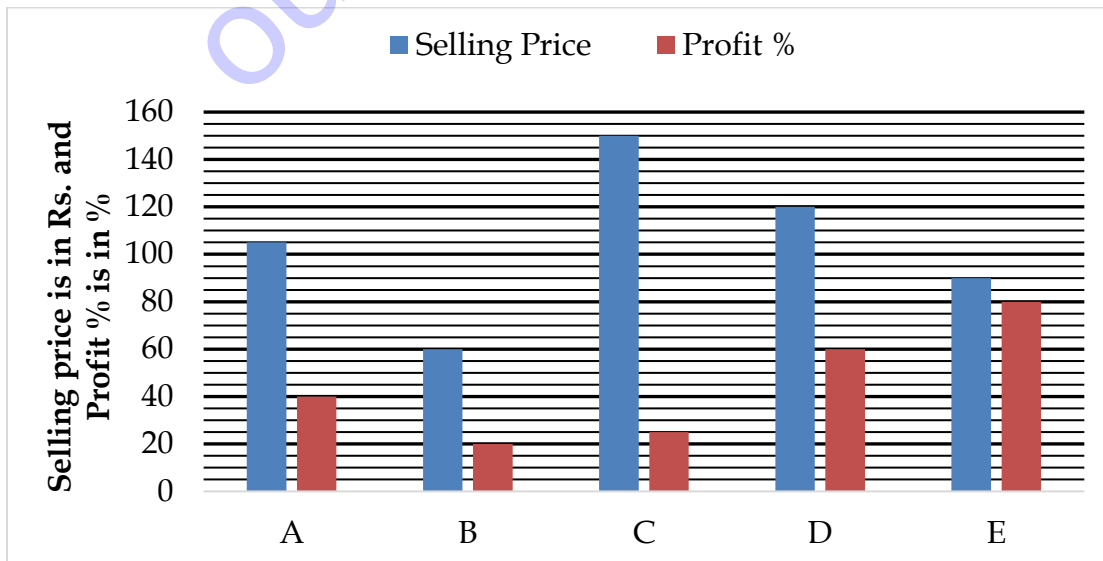
Q10. A and B entered into a partnership with Rs.800 and Rs.1600 respectively. From 9th months onward they each decided to invest Rs.100 more on starting of each month. If total annual profit is Rs.7700 then find the profit share of A.

- (a) Rs.2650
- (b) Rs.3250
- (c) Rs.4250
- (d) Rs.2350
- (e) Rs.1650

Q11. A starts a business, after 6 months B also join him with Rs.4500 and after 2 months of B's joining C also join them with Rs.4500. If A gets approx. Rs 4900 out of total annual profit of Rs. 10,000 then find the approximate value of initial investment of A.

- (a) Rs.4800
- (b) Rs.4200
- (c) Rs.3600
- (d) Rs.4400
- (e) Rs.5200

Directions (12-16): - Bar chart given below shows selling price of five articles and profit % earned on selling these articles by Ravi. Study the data carefully & answer the following questions.



Q12. Ravi sold article 'D' to Shyam who again sold it at 25% profit. Find the difference between profit earned by Ravi to profit earned by Shyam.

- (a) Rs. 5
- (b) Rs. 10
- (c) Rs. 15
- (d) Rs. 20
- (e) Rs. 25

Q13. Cost price of article 'A' is what percent more/less than cost price of article 'C'.

- (a) 62.5%
- (b) 37.5%
- (c) 25%
- (d) 75%
- (e) 50%

Q14. Ravi marked article B, 50% above its cost price, then what percent discount should be given on marked price to earn the given profit?

- (a) 40%
- (b) 30%
- (c) 25%
- (d) 20%
- (e) 10%

Q15. Profit earned on selling article 'E' is how much more/less than profit earned on selling article 'C'.

- (a) Rs.40
- (b) None of the given options
- (c) Rs.30
- (d) Rs.20
- (e) Rs.10

Q16. Ravi mark-up article 'A' such that on selling article 'A' at 16% discount he will earn the given profit. Mark up price of article 'A' is what percent more than its cost price?

- (a) $33\frac{1}{3}\%$
- (b) $66\frac{2}{3}\%$
- (c) $16\frac{2}{3}\%$
- (d) $26\frac{2}{3}\%$
- (e) $73\frac{1}{3}\%$

Direction (17-20): Two quantities that is I and II are given in following questions. Students is expected to solve the quantities and answer them according to given options by comparing their numerical values.

Q17. $3^{x+5} \cdot 9^{2x-4} = 9^{5x-14}$

And, $2y^2 - 15y - 28 = 3y^2 - 23y - 13$

Quantity I: Value of 'x'

Quantity II: Value of 'y'

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I \geq Quantity II
- (d) Quantity I \leq Quantity II
- (e) Quantity I = Quantity II or No relation

Q18. Quantity I: When an article sold at 28% discount then profit earned is 29.6%. 'x' is the profit % when article sold at 30% discount.

Quantity II: 38

- (a) Quantity I = Quantity II or No relation
- (b) Quantity I < Quantity II
- (c) Quantity I \leq Quantity II
- (d) Quantity I \geq Quantity II
- (e) Quantity I > Quantity II

Q19. 12 men can complete a work in 10 days. 18 women can do the same work in 20 days. 27 children can do that work in 20 days. 9 women and 9 children together do that work for 16 days.

Quantity I: No. of men required to complete the remaining work in one day

Quantity II: 36

- (a) Quantity I > Quantity II
- (b) Quantity I \leq Quantity II
- (c) Quantity I = Quantity II or No relation
- (d) Quantity I < Quantity II
- (e) Quantity I \geq Quantity II

Q20. Quantity I: Time taken to fill the tank when A, B and C are opened in every alternate minute starting with A and ending with C. A, B and C alone takes 20 minutes, 15 minutes and 12 minutes respectively to fill the tank.

Quantity II: Find the time taken by waste pipe to empty the full cistern. Two pipes alone can fill a cistern in 10 minutes and 15 minutes respectively. When these two pipes along with the waste pipe are opened, the cistern gets filled in 18 minutes.

- (a) Quantity I > Quantity II
- (b) Quantity I < Quantity II
- (c) Quantity I \geq Quantity II
- (d) Quantity I \leq Quantity II
- (e) Quantity I = Quantity II or No relation

Directions (21-25): - Data given below shows number of units of electricity consumed by Fans, Lights and Other appliances in three different houses. Study the data carefully and answer the following questions.

House A → Total number of units consumed in House 'A' is 250 units out of which 120 units are consumed by Other appliances. Units consumed by Fans is 30 less than Units consumed by Lights.

House B → Units consumed by Lights in House 'A' and House 'B' is same. Units consumed by Fans in House 'B' are 60% more than that of fans in House 'A'.

House C → Total units consumed by Lights in all three houses is 200 units and units consumed by Fans and Lights is same in House C. Units consumed by Other appliances is 125% more than that by Fans in this House. Total units consumed by Other appliances in all three houses is 320 units.

Q21. Number of units consumed by Lights in House 'B' is what percent more of the units consumed by Lights in house 'C'?

- (a) 100%
- (b) 200%
- (c) 120%
- (d) 50%
- (e) 150%

Q22. Average number of units consumed by Other appliances in House 'B', 'C' and 'D' is 110 units. Find the units consumed by Other appliances in House 'D'?

- (a) 110 units
- (b) None of the given options
- (c) 130 units
- (d) 120 units
- (e) 140 units

Q23. Find total number of units consumed in House 'A' and 'C' together?

- (a) None of the given options
- (b) 410 units
- (c) 430 units
- (d) 400 units
- (e) 420 units

Q24. Find the difference between Units consumed by Other appliances in House 'B' and house 'C'?

- (a) 10 units
- (b) 20 units
- (c) 30 units
- (d) None of the given options
- (e) 40 units

Q25. Total units consumed by Fans and Lights together in House 'C' is what percent less than total units consumed by Lights and Other appliances together in House 'A'?

- (a) 20%
- (b) 40%
- (c) 50%
- (d) 60%
- (e) 80%

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Solutions

S1. Ans.(c)

Sol. Rahul runs for 15 minutes at a speed of 5 km/hr and 25 minutes at a speed of 9 km/hr

$$\therefore \text{Total distance covered by Rahul on treadmill} = \frac{15}{60} \times 5 + \frac{25}{60} \times 9 = 1.25 + 3.75 = 5\text{km}$$

$$A = 5\text{km}$$

S2. Ans.(e)

Sol. P₂ can complete work in $= 6 \times \frac{5}{4} = 7.5$ hours

$$P_1 \text{ and } P_2 \text{ together can complete total work in} = \frac{6 \times 7.5}{6 + 7.5} = \frac{45}{13.5} = 3\frac{1}{3} \text{ hours}$$

$$\Rightarrow P_1 \text{ and } P_2 \text{ together can complete 75\% work in} = \frac{10}{3} \times \frac{75}{100} = 2.5 \text{ hours}$$

They finish work at 12:30 p.m.

$$\Rightarrow \text{They start their work at } 12:30 - 2:30 = 10 \text{ a.m.}$$

$$B = 10 \text{ a.m.}$$

S3. Ans.(b)

Sol. P₂ can complete work in $= 6 \times \frac{5}{4} = 7.5$ hours

Rahul and P₂ can complete same work in 3 hours

$$\Rightarrow \text{Rahul can complete same work in} = \frac{1}{\frac{1}{3} - \frac{1}{7.5}} = \frac{1}{0.2} = 5 \text{ hours}$$

Ratio of efficiency of Rahul and P₁ is 6 : 5

$$C = \frac{6-5}{5} \times 100 = 20\%$$

S4. Ans.(d)

Sol. Distance between his house and his office is 45 km

$$\Rightarrow \text{His speed} = \frac{45}{1.5} = 30\text{km/hr}$$

Speed of stream is 3 km/hr

$$\Rightarrow \text{Upstream speed of boat} = 30 - 3 = 27$$

$$\text{Time to reach home i.e, } D = \frac{45}{27} = 1\frac{2}{3} \text{ hours}$$

S5. Ans.(a)

Sol. Each friend has 2 dices so there are total 36 outcomes by one friend.

If either Rahul or Aman throw their dices, then there are total 36 + 36 outcomes

$$\text{So, } E = 36 + 36 = 72$$

S6. Ans.(e)

Sol. Sum of outcomes of dices should be 8 so it can be (4,4), (3,5) and (2,6)

In (4,4)

$$\text{Addition of square of outcomes} = 4^2 + 4^2 = 32$$

In (3,5)

$$\text{Addition of square of outcomes} = 3^2 + 5^2 = 34$$

In (2,6)

$$\text{Addition of square of outcomes} = 2^2 + 6^2 = 40$$

Now Raman will win the game if he gets (2,6) and remaining two get (3,5) or (4,4)

So, option (e) is the correct answer

S7. Ans.(d)

Sol. Let length and breadth of rectangle be l cm and b cm respectively

So, ATQ

$$l \times (b + 6) - b(l - 6) = 252$$

$$6(l + b) = 252$$

$$2(l + b) = 84 \text{ cm}$$

S8. Ans.(b)

Sol. Diagonal of square = $2.5\sqrt{2} \times \sqrt{2} = 5$ cm

Length of rectangle = $5 \times 3 = 15$ cm

Breadth = 5 cm

$$\text{Area of rectangle} = 15 \times 5 = 75 \text{ cm}^2$$

S9. Ans.(e)

Sol. Speed of boat in still water = 20 km/hr

Speed of stream = $\frac{20}{7}$ km/hr

Ratio of speed of boat in upstream to that of downstream = $6 : 8 \Rightarrow 3 : 4$

Time taken by boat in upstream to that of downstream = $4 : 3$

$$\text{Required distance} = \left(20 + \frac{20}{7}\right) \times \frac{5 \times 3}{7} \approx 50 \text{ km}$$

S10. Ans.(a)

Sol. Ratio of profit of

A	:	B
$800 \times 8 + 900 +$		$1600 \times 8 + 1700 +$
$1000 +$:	$1800 +$
$1100 +$		$1900 +$
1200		2000
53	:	101

$$\text{Profit of A} \Rightarrow \frac{7700}{154} \times 53 = 2650 \text{ Rs.}$$

S11. Ans.(c)**Sol.** Let initial investment of A = x

Ratio of profit

$$\begin{array}{l} A : B : C \\ 12 \times x : 6 \times 4500 : 4 \times 4500 \\ x : 2250 : 1500 \end{array}$$

Now ATQ

$$\frac{x}{x + 2250 + 1500} = \frac{49}{100}$$

$$x \approx \text{Rs } 3600$$

S12. Ans.(c)**Sol.** S.P. of article D sold by Ravi = Rs.120

Profit % earned on article D by Ravi = 60%

$$\text{Cost price of article D for Ravi} = \frac{120}{160} \times 100 = \text{Rs}75$$

$$\text{Profit earned by Shyam} = 120 \times \frac{25}{100} = \text{Rs}30$$

$$\text{Profit earned by Ravi} = 120 - 75 = \text{Rs } 45$$

$$\text{Required difference} = 45 - 30 = \text{Rs.}15$$

S13. Ans.(b)

$$\text{Sol. Cost price of article A} = \frac{105}{140} \times 100 = \text{Rs}75$$

$$\text{Cost price of article C} = \frac{150}{125} \times 100 = \text{Rs}120$$

$$\text{Required \%} = \frac{120-75}{120} \times 100 = \frac{45}{120} \times 100 = 37.5\%$$

S14. Ans.(d)

$$\text{Sol. Cost price of article B} = \frac{60}{120} \times 100 = \text{Rs } 50$$

$$\text{Marked price of article B} = 50 \times 1.5 = \text{Rs } 75$$

$$\text{Required discount \%} = \frac{75-60}{75} \times 100$$

$$= \frac{15}{75} \times 100 = 20\%$$

S15. Ans.(e)

$$\text{Sol. Profit earned on selling article E} = \frac{90}{180} \times 80 = \text{Rs } 40$$

$$\text{Profit earned on selling article C} = \frac{150}{125} \times 25 = \text{Rs } 30$$

$$\text{Required difference} = 40 - 30 = \text{Rs } 10$$

S16. Ans.(b)

$$\text{Sol. Mark price of article A} = \frac{105}{84} \times 100 = \text{Rs } 125$$

$$\text{CP of article A} = \frac{105}{140} \times 100 = \text{Rs}75$$

$$\text{Mark up \% of article A} = \frac{125-75}{75} \times 100 = 66\frac{2}{3}\%$$

S17. Ans.(c)

Sol. $3^{x+5} \cdot 9^{2x-4} = 9^{5x-14}$

$$\Rightarrow 3^{x+5} \cdot 3^{4x-8} = 3^{10x-28}$$

$$\Rightarrow 3^{x+5+4x-8} = 3^{10x-28}$$

$$\Rightarrow 3^{5x-3} = 3^{10x-28}$$

$$\Rightarrow 5x - 3 = 10x - 28$$

$$\Rightarrow 5x = 25$$

$$\Rightarrow x = 5$$

And, $2y^2 - 15y - 28 = 3y^2 - 23y - 13$

$$\Rightarrow y^2 - 8y + 15 = 0$$

$$\Rightarrow y^2 - 3y - 5y + 15 = 0$$

$$\Rightarrow y(y - 3) - 5(y - 3) = 0$$

$$\Rightarrow (y - 5)(y - 3) = 0$$

$$\Rightarrow y = 5, 3$$

Quantity I: - Value of $x = 5$

Quantity II: - Value of $y = 5, 3$

\Rightarrow Quantity I \geq Quantity II

S18. Ans.(b)

Sol. Quantity I:

Let C.P. \rightarrow Rs 100

So, S.P. \rightarrow Rs 129.6

ATQ,

$$\text{M.P.} \rightarrow \frac{129.6}{72} \times 100 \Rightarrow \text{Rs } 180$$

$$'x' \Rightarrow \frac{180 \times (100 - 30)}{100} - 100 \Rightarrow 26\%$$

Quantity II $>$ Quantity I

S19. Ans.(a)

Sol. Let efficiency of 1 man, 1 woman and 1 child is m , w and c respectively

ATQ,

$$10 \times 12m = 18w \times 20 = 27c \times 20$$

$$2m = 6w = 9c$$

Let total work = 120 m

Quantity I:

$$(9w + 9c) \times 16 = (3m + 2m) \times 16 = 80 \text{ m}$$

$$\text{Remaining work} = 120 \text{ m} - 80 \text{ m} = 40 \text{ m}$$

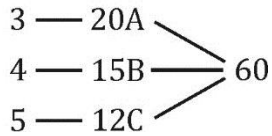
Number of men required to complete remaining work in one day = 40

Quantity II = 36

Quantity I $>$ Quantity II

S20. Ans.(a)

Sol. Quantity I:-



Let total capacity of tank be 60.

Units filled in first three minutes = $3 + 4 + 5 = 12$

Hence, total time taken = $5 \times 3 = 15$ minutes

Quantity II:-

Let waste pipe can empty the cistern in x min

$$\frac{1}{10} + \frac{1}{15} - \frac{1}{x} = \frac{1}{18}$$
$$\Rightarrow \frac{1}{x} = \frac{9+6-5}{90} = \frac{10}{90}$$

$\Rightarrow x = 9$ minutes

Quantity I > Quantity II

Solution (21-25):

House A →

Units consumed by Other appliances = 120 units

Let unit consumed by Lights = x

Then, Units consumed by Fans = $x - 30$

$$x + x - 30 = 250 - 120$$

$$2x = 130 + 30$$

$$x = 80$$

Units consumed by Lights = 80 units

Units consumed by Fans = 50 units

House B →

Units consumed by Lights = 80 units

$$\text{Units consumed by Fans} = \frac{160}{100} \times 50 = 80 \text{ units}$$

House C →

Total units consumed by Lights in all three houses = 200 units

$$\Rightarrow \text{Units consumed by Lights in house 'C'} = 200 - 80 - 80 = 40 \text{ units}$$

Units consumed by Fans = 40 units

$$\text{Units consumed by Other appliances} = 40 \times \frac{225}{100} = 90 \text{ units}$$

$$\text{Total units consumed by Other appliances in House 'B'} = 320 - 90 - 120 = 110 \text{ units}$$

Units Consumed	Fans	Lights	Other appliances
House A	50	80	120
House B	80	80	110
House C	40	40	90

S21. Ans.(a)

Sol. Required % = $\frac{80-40}{40} \times 100 = 100\%$

S22. Ans.(c)

Sol. Total number of units consumed by Other appliances in House

'B', 'C' and 'D' together

$$= 110 \times 3 = 330 \text{ units}$$

Units consumed by Other appliances in House 'D'

$$= 330 - 110 - 90 = 130 \text{ units}$$

S23. Ans.(e)

Sol. Total units consumed in House 'A' and 'C' together

$$= 50 + 80 + 120 + 40 + 40 + 90 = 420 \text{ units}$$

S24. Ans.(b)

Sol. Required difference = $110 - 90 = 20 \text{ units}$

S25. Ans.(d)

Sol. Total units consumed by Fans and Lights in House 'C' = $40 + 40 = 80 \text{ units}$

Total units consumed By Lights and Other appliances in House 'A' = $80 + 120 = 200 \text{ units}$

$$\text{Required \%} = \frac{200-80}{200} \times 100 = \frac{120}{200} \times 100 = 60\%$$

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