

### DI Test 3

{1 – 2}: Study the following data carefully and answer the given questions:

In a tank, three inlet pipes P, Q and R and two outlet pipes S and T are connected. Time taken by pipes P, R and T together to fill the tank is  $14\frac{2}{7}\%$  of that taken by pipes R and T together to empty the tank and efficiency of pipe R is 80% of that of pipe T. Pipes Q and T together can fill the tank in 40 minutes and efficiency of pipe Q is 150% more than that of pipe R. Ratio of time taken by pipes Q and S together to empty the tank to the time taken by pipe P alone to fill the tank is 16: 5.

1. If pipes Q, S and T are opened in such a way that, for 1<sup>st</sup> one minute pipes Q and T are opened together and for next one minute pipes Q and S are opened together and so on, then in what time 65% part of the tank will be filled?

1.116 minutes 2.102 minutes 3.110 minutes 4.104 minutes 5.112 minutes

2. When pipes P and Q work with their original efficiency, they together can fill the tank in 'm' minutes. When pipes P and Q work with 100% and 80% of their original efficiency respectively, they together can fill the tank in 'n' minutes. Find the ratio of 'm' to 'n'.

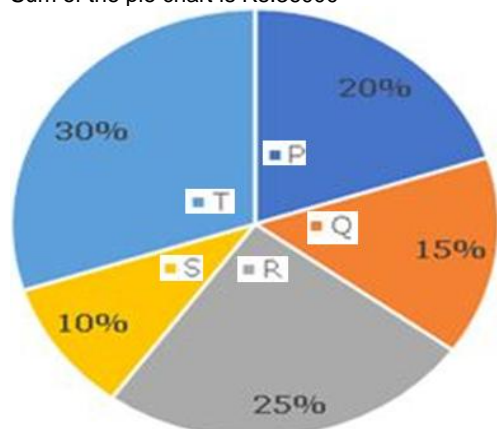
A). 8: 9 B). 5: 6 C). 7: 8 D). 4: 5 E).6: 7

1.25 minutes 2.32 minutes 3.30 minutes 4.34 minutes 5.28 minutes

{3 – 6}: Study the following data carefully and answer the questions:

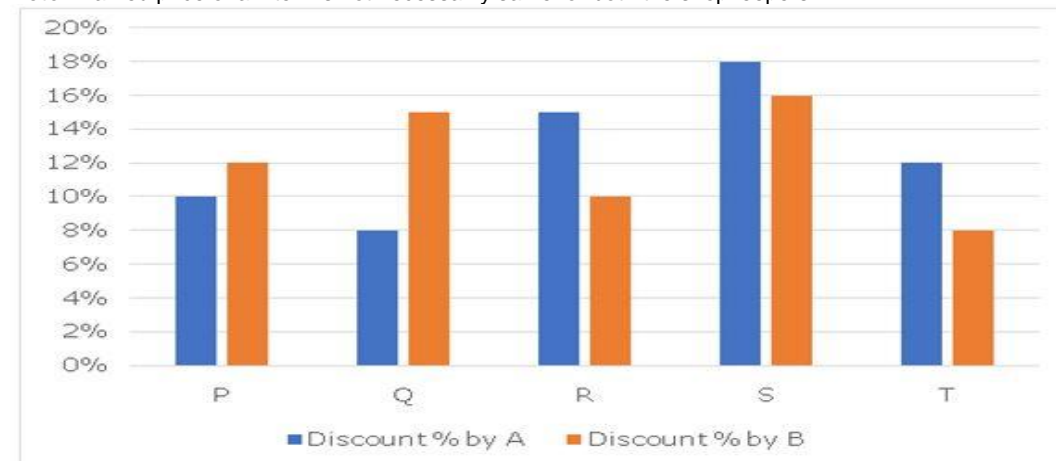
The Pie chart given below shows the percentage distribution of cost price of five items namely P, Q, R, S and T.

Sum of the pie chart is Rs.36000



The Bar graph given below shows the percentage discount offered by shopkeeper A and shopkeeper B on the marked price of those five items.

**Note:** Marked price of an item is not necessarily same for both the shopkeepers.



3. If the Shopkeeper A marked up the price of an articles P and Q by 35% and 15% respectively and then he sold these 2 articles at 'x'% and 'y'% profit respectively, then what is the difference between the value of 'x' and the value of 'y'.

1.14.8 2.15.7 3.15.4 4.13.5 5.None of these

4. Shopkeeper A marked up the price of item P as 'x'% above its cost price and sold the article at 'x – 13'% while shopkeeper B marked up the price of item P as 'y'% above its cost price and sold the article at 'y – 15%', then what is the sum of profit amount earned by both the shopkeepers together after selling item P?

1.Rs.1260 2.Rs.1520 3.Rs.1390 4.Rs.1944 5.None of these

5. Marked up amount on item Q by shopkeeper A is half of that by shopkeeper B and sum of profit amount earned by both the shopkeepers together after selling item Q is Rs.330, then what is the ratio of the amount of discount offered by shopkeeper A to that by shopkeeper B after selling item Q?

1.7: 13 2.16: 33 3.15: 8 4.26: 63 5.None of these

6. If ratio of marked up amount of item T for shopkeeper A to that for shopkeeper B is 7: 6 and amount of discount offered by shopkeeper A is Rs.648 more than that of shopkeeper B, then what is the approximate profit per cent earned by both the shopkeepers together after selling item T?

1.44.88% 2.66.66% 3.33.33% 4.55.55% 5.28.82%

{7 – 11} A Car and a Bus travel certain distances on five days of the week. The tables shows the distances travel by them and the sum of time taken by them to cover the respective distance. It also shows the speeds of Car and Bus on each day.

Days	Speed of Car (in km/hr)	Distance travelled by Car (in km)	Speed of Bus (in km/hr)	Distance travelled by Bus (in km)	Total time taken (in hours)
Day 1	80	A	75	A + 80	11.4
Day 2	60	B + 60	80	B – 80	14
Day 3	90	C – 50	60	C + 100	15
Day 4	120	D + 60	90	D + 150	8
Day 5	40	E – 20	50	E	22

7. Find the value of  $(B \times D \times E) \div (A \times C)$ .

(A) 240 (B) 360 (C) 400 (D) 480 (E) Relation cannot be determined

8. Which of the statements given below are False?

I. The distance travel by Car on Day 1 is 480 km.

II. The distance travel by Bus on Day 3 is 600 km.

III. The distance travel by Bus on Day 5 is 500 km.

(A) Only I (B) Only II (C) Both II and III (D) Both I and III (E) None of these

9. What is the difference between the average distance traveled by Car on all five days together and the average distance traveled by Bus on all five days together?

(A) 25 km (B) 30 km (C) 35 km (D) 40 km (E) None of these

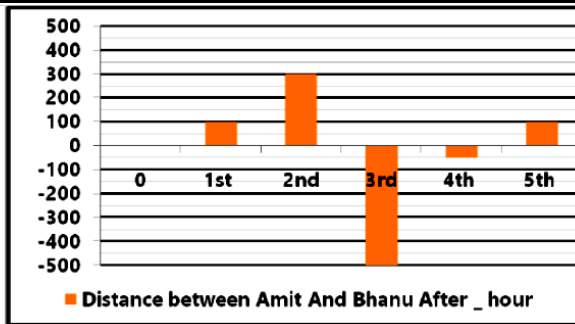
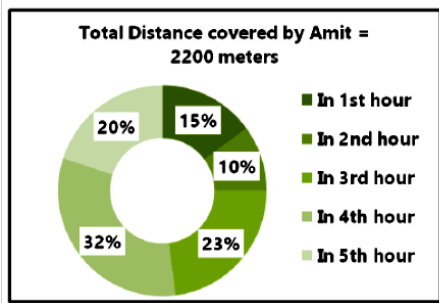
10. If on Day 3, Speed of Car decreased by 20% and the speed of Bus increased by 25%, then find the difference between the total time taken by Car and Bus to cover their respective journey.

(A) 1.25 hours (B) 1.50 hours (C) 1.75 hours (D) 2.25 hours (E) None of these

11. On Day 4 total time taken to travel same distance as before when speed of Car is increase by 25% and speed of Bus decrease by 50% is what percentage more/less than total time taken on Day 5 by Car to travel 'A' km and Bus to travel 'D' km?

(A) 17.5% (B) 22.5% (C) 24.5% (D) 27.5% (E) None of these

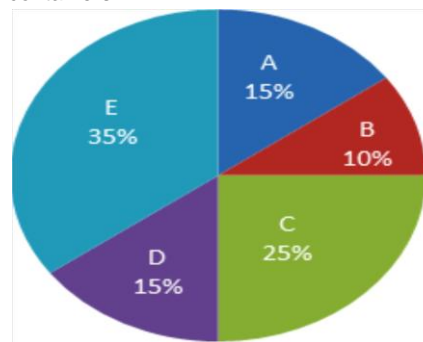
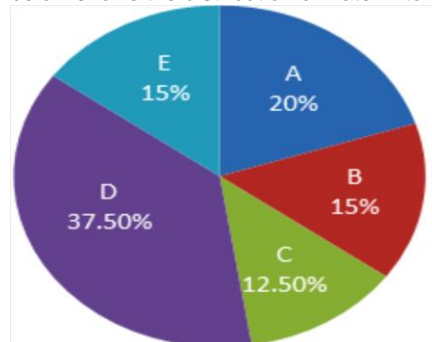
{12 – 15}: Amit and Bhanu ran a race of 2200 meters. The donut graph shows the distance covered by Amit in each hour as a percentage of total distance covered by him. The Bar graph shows the relative distance between Amit and Bhanu after each hour with respect to Amit.(e.g. after 1st hour Amit is ahead of Bhanu, after 3rd hour Bhanu is ahead of Amit).



12. What was Bhanu's average maximum speed in any hour?  
 (A) 1080 m/hr (B) 1248 m/hr (C) 1306 m/hr (D) 1524 m/hr (E) None of these
13. What is the ratio of total distance travelled by Amit and Bhanu after 2 hours?  
 (A) 9 : 3 (B) 11 : 5 (C) 15 : 7 (D) 17 : 9 (E) None of these
14. How much time was taken by Bhanu to complete the race?  
 (A) 5.4 hours (B) 6.4 hours (C) 7.2 hours (D) can't be determined (E) None of these
15. What would be the average speed of Bhanu in the fifth hour to finish the race with Amit?  
 (A) 350 m/hr (B) 370 m/hr (C) 390 m/hr (D) 410 m/hr (E) None of these
16. What is the difference between the average distance covered by Amit in first four hours and the average distance covered by Bhanu in all five hours?  
 (A) 20 m (B) 30 m (C) 40 m (D) 50 m (E) None of these

{17 – 19}: Study the following pie charts carefully and answer the questions based on it. A milkman has some quantity of pure milk and some water, both of which he distributes in five containers A, B, C, D and E.

The pie chart given below shows the distribution of pure milk in five containers. / The pie chart given below shows the distribution of water into five containers

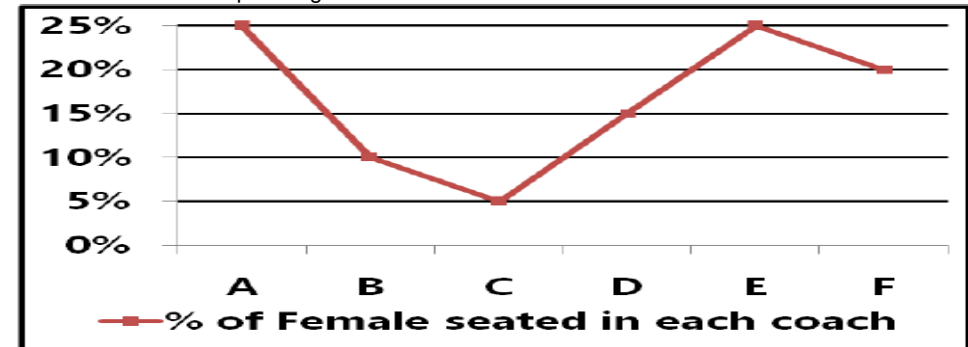


Every mixture is sold by the shopkeeper at the cost price of pure milk (Rs. 60/lit) unless mentioned otherwise.

17. The total milk and water with the milkman is 320lit and 60lit. What is the difference between the profit made by selling mixture of container C and D?  
 A. 320 B. 360 C. 420 D. 280 E. 240
18. The milkman further increases the selling price of mixture of container B by 14.28% and that of D by 9.09%, thereby making the profit percentage on B equal to the 5/3 times the profit percentage on D. What is the percentage profit made on selling the mixture of container E?  
 A. 54.54% B. 37.5% C. 58.33% D. 42.33% E. 62.5%
19. On selling the mixture of containers A and C, the total profit is Rs. 24000 and the difference between their selling prices is Rs. 15600. What is the total amount milkman gets on selling the mixture of container D?  
 A. 112000 B. 84000 C. 154000 D. 117000 E. 124000

{20 – 24}: A train has 6 - coaches A - F and it is assigned to start from Delhi and reach Bhuvneshwar with stopping in middle. Number of passengers assigned for each coach is equal and only one person can be seated on a single seat. If an odd positional numbered coach according to English alphabetical order fails to seat all the assigned passengers then remaining passengers are seated in next odd positional numbered coach and If an even positional numbered coach according to English alphabetical order fails to

seat all the assigned passengers then remaining passengers are seated in next even positional numbered coach. The number of passengers which could not be seated in coaches E and F were seated in a bus. Total number of male passengers seated in train is 12360.



Coaches	% or Actual Number of passengers seated	% or Actual Number of passengers could not be seated
A		1200
B	80%	
C	75%	1500
D		2880
E	60%	
F	5760	

20. What is the ratio between number of passengers who were seated in coach A and C?  
 (A) 2 : 3 (B) 4 : 5 (C) 6 : 7 (D) 8 : 9 (E) None of these
21. What is the difference between the total number of males and females seated in the train?  
 (A) 360 (B) 480 (C) 600 (D) 720 (E) None of these
22. What is the total number of passengers seated in the bus?  
 (A) 2700 (B) 3500 (C) 4440 (D) 5600 (E) None of these
23. What is the average number of male passengers seated in coaches C, D and E?  
 (A) 1680 (B) 1760 (C) 1840 (D) 1920 (E) None of these
24. Number of passengers seated in coach B is what percentage more/less than number of female passengers seated in coach E?  
 (A) 20% (B) 24% (C) 28% (D) 36% (E) None of these
- {25 – 29}: Some people work in a factory and they have three types of bikes, namely Hero, TVS and Bajaj. The number of people who have only Hero bikes is 248. The number of people who have all the bikes is 3/4 of the number of people who have both Hero and Bajaj bikes. The number of people who have only TVS bike is 7/4 of Total number of people who have only Bajaj bikes & who have both Hero and Bajaj bikes. The number of people who have only Hero bikes is four times the number of people who have both Bajaj and TVS bikes but do not have Hero bikes. The total number of people working in the factory is 2056. The total number of people is 68 more than twice the number of people who have only TVS bikes. The number of people who have both Hero and Bajaj bikes but not TVS bikes is 18 less than 1/2 of the people who have only Hero bikes. It is known that every person in the factory has at least one out of three bikes.
25. How many persons have both Hero and Bajaj bikes?  
 (A) 318 (B) 106 (C) 418 (D) 424 (E) None of these
26. What is the ratio of the number of persons who have all three types of bikes to the persons who have both Hero and TVS but not Bajaj?  
 (A) 149 : 97 (B) 145 : 95 (C) 159 : 92 (D) 138 : 89 (E) None of these
27. What is the difference between the number of persons who have only TVS and those who have only Bajaj?  
 (A) 840 (B) 850 (C) 860 (D) 870 (E) None of these
28. The number of persons who have both Hero and Bajaj is what percent of the total number of persons who have Bajaj bike?  
 (A) 66.60% (B) 62.40% (C) 69.50% (D) 67.30% (E) None of these
29. How many persons have only two bikes?  
 (A) 348 (B) 352 (C) 342 (D) 358 (E) None of these

**{1 – 2}**

**Solution**

According to the question,

Let time taken by pipe T alone to empty the tank = 't' minutes

Since efficiency of pipe R is 80% of that of pipe T.

So, time taken by pipe R alone to fill the tank =  $t * (100/80) = (5t/4)$  minutes

Since efficiency of pipe Q is 150% more than that of pipe R.

So, time taken by pipe Q alone to fill the tank =  $(5t/4) * (100/250) = (t/2)$  minutes

Since time taken by pipes Q and T together can fill the tank = 40 minutes

So,  $(2/t) - (1/t) = 1/40$

t = 40

Time taken by pipe T alone to empty the tank = 40 minutes

Time taken by pipe R alone to fill the tank =  $40 * (5/4) = 50$  minutes

Time taken by pipe Q alone to fill the tank =  $40/2 = 20$  minutes

Part of tank emptied by pipes R and T together in 1 minute:

$(1/40) - (1/50) = (5 - 4)/200 = 1/200$

So, time taken by pipes R and T together to empty the tank = 200 minutes

And time taken by pipes P, R and T together to fill the tank =  $14(2/7) \%$  of 200 =  $(200/7)$

minutes

So,  $(1/P) + (1/R) - (1/T) = 7/200$

$(1/P) + (1/50) - (1/40) = 7/200$

P = 25

Time taken by pipe P alone to fill the tank = 25 minutes

Since Ratio of time taken by pipes Q and S together to empty the tank to the time taken by pipe P alone to fill the tank is 16: 5.

So, time taken by pipes Q and S together to empty the tank =  $25 * (16/5) = 80$  minutes.

So,  $(1/S) - (1/Q) = 1/80$

$1/S = (1/80) + (1/20) = (1 + 4)/80 = 1/16$

So, time taken by pipe S alone to empty the tank = 16 minutes

**1. Answer: D**

According to the question,

Time taken by pipe Q alone to fill the tank = 20 minutes

Time taken by pipe S alone to empty the tank = 16 minutes

Time taken by pipe T alone to empty the tank = 40 minutes

Let capacity of tank = LCM of 20, 16 and 40 = 400 units

So, in 1<sup>st</sup> one hour part of tank filled by pipes Q and T together:

$(400/20) - (400/40) = 10$  units

And in next one hour part of tank emptied by pipes Q and S together:

$(400/16) - (400/20) = 5$  units

So, part of tank filled in 2 hours =  $10 - 5 = 5$  units

Since capacity of tank = 400 units

So, time taken by pipes Q, S and T to fill 65% part of tank:

$400 * (65/100) * (2/5) = 104$  minutes

**2. Answer: A**

According to the question,

Time taken by pipe P alone to fill the tank with its original efficiency = 25 minutes

Time taken by pipe Q alone to fill the tank with its original efficiency = 20 minutes

Part of tank filled by pipes P and Q together in 1 minute:

$(1/25) + (1/20) = (4 + 5)/100 = 9/100$

So, time taken by pipes P and Q together to fill the tank with their original efficiency =  $m = (100/9)$  minutes

Since time taken by pipe Q alone to fill the tank with 80% of its original efficiency =  $20 * (100/80) = 25$  minutes

So, part of tank filled by pipes P and Q together with Q's new efficiency:

$(1/25) + (1/25) = (1 + 1)/25 = 2/25$

So, time taken by pipes P and Q together to fill the tank with Q's new efficiency =  $n = (25/2)$  minutes

Required ratio =  $m: n = (100/9): (25/2) = 8: 9$

**{3 – 6}**

**Solution**

Cost price of item P = 20% of 36000 = Rs.7200

Cost price of item Q = 15% of 36000 = Rs.5400

Cost price of item R = 25% of 36000 = Rs.9000

Cost price of item S = 10% of 36000 = Rs.3600

Cost price of item T = 30% of 36000 = Rs.10800

Items	Cost price	Discount per cent	
		by shopkeeper A	by shopkeeper B
P	7200	10%	12%
Q	5400	8%	15%
R	9000	15%	10%
S	3600	18%	16%
T	10800	12%	8%

**3. Answer: B**

Marked price of article P for shopkeeper A = 135% of 7200 = Rs.9720

Selling price of article P for shopkeeper A = 90% of 9720 = Rs.8748

Profit amount earned on article P by shopkeeper A =  $8748 - 7200 = Rs.1548$

Marked price of article Q for shopkeeper A = 115% of 5400 = Rs.6210

Selling price of article P for shopkeeper A = 92% of 6210 = Rs.5713.2

Profit amount earned on article Q by shopkeeper A =  $5713.2 - 5400 = Rs.313.2$

According to the question:

$x\% = (1548/7200) * 100$

$x\% = 21.5\%$

$x = 21.5$

$y\% = (313.2/5400) * 100$

$y\% = 5.8\%$

$y = 5.8$

Required difference =  $x - y = 21.5 - 5.8 = 15.7$

**4. Answer: D**

Marked price of item P for shopkeeper A =  $(100 + x)\%$  of 7200 =  $72(100 + x)$

Selling price of item P for shopkeeper A = 90% of  $72(100 + x)$

Given that, 90% of  $72(100 + x) = (100 + x - 13)\%$  of 7200

$$64.8(100 + x) = 72(87 + x)$$

$$0.9(100 + x) = (87 + x)$$

$$90 + 0.9x = 87 + x$$

$$3 = 0.1x$$

$$x = 30$$

Profit amount earned by shopkeeper A after selling item P =  $(x - 13)\%$  of 7200 = 17% of 7200 = Rs.1224

Marked price of item P for shopkeeper B =  $(100 + y)\%$  of 7200 = 72(100 + y)

Selling price of item P for shopkeeper B = 88% of 72(100 + y)

Given that, 88% of 72(100 + y) =  $(100 + y - 15)\%$  of 7200

$$63.36(100 + y) = 72(85 + y)$$

$$0.88(100 + y) = 85 + y$$

$$88 + 0.88y = 85 + y$$

$$3 = 0.12y$$

$$y = 25$$

Profit amount earned by shopkeeper b after selling item P =  $(y - 15)\%$  of 7200 = 10% of 7200 = Rs.720

Sum of profit amount earned by both the shopkeepers together after selling item P = 1224 + 720 = Rs.1944

**5. Answer: B**

Let marked up amount on item Q by shopkeepers A and B is 'x' and '2x' respectively.

Marked price of item Q for shopkeeper A =  $(5400 + x)$

Selling price of item Q for shopkeeper A = 92% of  $(5400 + x) = (4968 + 0.92x)$

Profit amount =  $(4968 + 0.92x) - 5400 = (0.92x - 432)$

Marked price of item Q for shopkeeper B =  $(5400 + 2x)$

Selling price of item Q for shopkeeper B = 85% of  $(5400 + 2x) = (4590 + 1.7x)$

Profit amount =  $(4590 + 1.7x) - 5400 = (1.7x - 810)$

According to the question:

$$(0.92x - 432) + (1.7x - 810) = 330$$

$$2.62x - 1242 = 330$$

$$2.62x = 1572$$

$$x = 600$$

Amount of discount offered by shopkeeper A = 8% of  $(5400 + x) = \text{Rs.}480$

Amount of discount offered by shopkeeper B = 15% of  $(5400 + 2x) = \text{Rs.}990$

Required ratio = 480: 990 = 16: 33

**6. Answer: A**

Let marked up amount of item T for shopkeeper A and B is 7x and 6x respectively.

Marked price of item T for shopkeeper A =  $(10800 + 7x)$

Amount of discount offered by shopkeeper A = 12% of  $(10800 + 7x) = (1296 + 0.84x)$

Marked price of item T for shopkeeper B =  $(10800 + 6x)$

Amount of discount offered by shopkeeper B = 8% of  $(10800 + 6x) = (864 + 0.48x)$

According to the question:

$$(1296 + 0.84x) - (864 + 0.48x) = 648$$

$$432 + 0.36x = 648$$

$$0.36x = 216$$

$$x = 600$$

Profit amount earned by shopkeeper A =  $[88\% \text{ of } (10800 + 7x)] - 10800 = \text{Rs.}2400$

Profit amount earned by shopkeeper B =  $[92\% \text{ of } (10800 + 6x)] - 10800 = \text{Rs.}2448$

Required profit per cent =  $[(2400 + 2448)/10800] \times 100 = 44.88\%$

**{7 - 11}**

On Day 1,

$$A/80 + (A + 80)/75 = 11.4$$

$$31A/1200 = 11.4 - 16/15 = 31/3$$

$$A = 400$$

Similarly solve for other days.

$$B = 480, C = 500, D = 300, E = 500$$

Day →	1	2	3	4	5
Distance travelled by Car (in km)	400	540	450	360	480
Time taken by Car (in hours)	5	9	5	3	12
Distance travelled by Bus (in km)	480	400	600	450	500
Time taken by Bus (in hours)	6.4	5	10	5	10

**7. Ans. (B)**

$$(B \times D \times E) \div (A \times C) = (480 \times 300 \times 500) \div (400 \times 500) = 360$$

**8. Ans. (A)**

From Statement I, Distance travelled by Car on Day 1 = 400 km (False)

From Statement II, Distance travelled by Bus on Day 3 = 600 km

(True)

From Statement III, Distance travelled by Bus on Day 5 = 500 km (True)

Only I

**9. Ans. (D)**

$$\text{Average Distance travelled by Car} = (400 + 540 + 450 + 360 + 480)/5 = 2230/5 = 446 \text{ km}$$

$$\text{Average Distance travelled by Bus} = (480 + 400 + 600 + 450 + 500)/5 = 2430/5 = 486 \text{ km}$$

$$\text{Difference} = 486 - 446 = 40 \text{ km}$$

**10. Ans. (C)**

On Day 3, Time taken by Car =  $5/0.8 = 6.25$  hours

Time taken by Bus =  $10/1.25 = 8$  hours

$$\text{Difference} = 8 - 6.25 = 1.75 \text{ hours}$$

**11. Ans. (B)**

On Day 4, Time taken by Car & Bus to travel with changed speed

$$= 3/1.25 + 5/0.5 = 2.4 + 10 = 12.4 \text{ hours}$$

On Day 5, Time taken by Car to travel A km & Bus to travel D km

$$= 400/40 + 300/50 = 10 + 6 = 16 \text{ hours}$$

$$\text{Required } \% = (16 - 12.4)/16 \times 100 = 22.5\%$$

**{12 - 16}**

Distance covered by Amit in 1st hour =  $2200 \times 0.15 = 330 \text{ m}$

Distance covered by Bhanu in 1st hour =  $330 - 100 = 230 \text{ m}$

Distance covered by Amit in 2nd hour =  $2200 \times 0.1 = 220 \text{ m}$

Distance covered by Bhanu in 2nd hours =  $(2200 \times 0.25 - 300) - 230 = 250 - 230 = 20 \text{ m}$

Similarly solve for upcoming hours.

Hour	Distance covered after _ hour		Distance covered in _ hour	
	By Amit	By Bhanu	By Amit	By Bhanu
1 <sup>st</sup>	330	230	330	230
2 <sup>nd</sup>	550	250	220	20
3 <sup>rd</sup>	1056	1556	506	1306
4 <sup>th</sup>	1760	1810	704	254
5 <sup>th</sup>	2200	2100	440	290

12. Ans. (C)

Maximum average speed of Bhanu = 1306 m/hr

13. Ans. (B)

Ratio = 550 : 250 = 11 : 5

14. Ans. (D)

For last (2200 - 2100 =) 100 m, Speed of Bhanu is not known, Hence time taken by Bhanu to complete the race Cannot be determined

15. Ans. (C)

To complete the race Speed in 5th hours, Speed of Bhanu should be = 2200 - 1810 = 390 m/hr

16. Ans. (A)

Difference = 1760/4 - 2100/5 = 440 - 420 = 20 m

{17 - 19}

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As per percentage distribution of milk

Ratio of milk in A, B, C, D and E = 20 : 15 : 12.5 : 37.5 : 15 = 8 : 6 : 5 : 15 : 6

Ratio of water in A, B, C, D and E = 15 : 10 : 25 : 15 : 35 = 3 : 2 : 5 : 3 : 7

Let the total milk = 40m and water = 20w

So, for each container we have,

Container	Milk	Water
A	8m	3w
B	6m	2w
C	5m	5w
D	15m	3w
E	6m	7w

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For container C,

Milk = 12.5% (320) = 40lit

Water = 25% (60) = 15 lit

Profit = 15 × 60 = Rs. 900

For container D,

Milk = 37.5% (320) = 120 lit

Water = 15% (60) = 9 lit

Profit = 9 × 60 = 540

Required difference = 900 - 540 = 360

Hence, option B is correct.

As per percentage distribution of milk

Ratio of milk in A, B, C, D and E = 20 : 15 : 12.5 : 37.5 : 15 = 8 : 6 : 5 : 15 : 6

Ratio of water in A, B, C, D and E = 15 : 10 : 25 : 15 : 35 = 3 : 2 : 5 : 3 : 7

Let the total milk = 40m and water = 20w

So, for each container we have,

Container	Milk	Water
A	8m	3w
B	6m	2w
C	5m	5w
D	15m	3w
E	6m	7w

For B,

$$\frac{SP}{CP} = \frac{(6m + 2w)}{6m}$$

Further increasing the SP by 14.28%

$$\frac{SP}{CP} = \frac{(6m + 2w)}{6m} \times \frac{8}{7}$$

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As per percentage distribution of milk

Ratio of milk in A, B, C, D and E = 20 : 15 : 12.5 : 37.5 : 15 = 8 : 6 : 5 : 15 : 6

Ratio of water in A, B, C, D and E = 15 : 10 : 25 : 15 : 35 = 3 : 2 : 5 : 3 : 7

Let the total milk = 40m and water = 20w

So, for each container we have,

Container	Milk	Water
A	8m	3w
B	6m	2w
C	5m	5w
D	15m	3w
E	6m	7w

Total profit of A and C = 60 × (3w + 5w) = 24000

w = 50

Difference between SP = [(8m + 3w) - (5m + 5w)] × 60 = 15600

= [3m - 2w] = 260

m = 120

Total selling price of Mixture of container D = (15m + 3w) × 60 = (15 × 120 + 3 × 50) × 60 = Rs, 117000

Hence, option D is correct.

$$\frac{P}{CP} = \frac{[(6m + 2w)/6m \times 8/7 - 6m]}{6m}$$

For D,

$$\frac{SP}{CP} = \frac{(3w + 15m)}{15m}$$

Further increasing the SP by 9.09%

$$\frac{SP}{CP} = \frac{(3w + 15m)}{15m} \times \frac{12}{11}$$

$$\frac{P}{CP} = \frac{[(3w + 15m)/15m \times 12/11 - 15m]}{15m}$$

$$\frac{[(6m + 2w)/6m \times 8/7 - 6m]}{6m} = \frac{5}{3} \times \frac{[(3w + 15m)/15m \times 12/11 - 15m]}{15m}$$

Solving we get:

$$\frac{w}{m} = \frac{1}{2}$$

For mixture E,

$$\text{Profit \%} = \frac{7w}{6m} \times 100 = \frac{7}{12} \times 100 = 58.33\%$$

Hence, option C is correct.

**{20 – 24}**

Passengers assigned in coach C =  $1500 / (1 - 0.75) = 1500 / 0.25 = 6000$

Number of passengers assigned in each coach =  $6000 - 1200 = 4800$

Passengers seated in Coach A =  $4800 - 1200 = 3600$

Passengers seated in Coach C =  $6000 \times 0.75 = 4500$

Passengers seated in Coach E =  $(4800 + 1500) \times 0.6 = 6300 \times 0.6 = 3780$

Passengers seated in Coach B =  $4800 \times 0.8 = 3840$

Passengers seated in Coach D =  $(4800 + 4800 \times 0.2) - 2880$

=  $5760 - 2880 = 2880$

Passengers seated in Coach F = 5760

Passengers seated in Bus =  $6300 \times 0.4 + (4800 + 2880) - 5760$

=  $2520 + 1920 = 4440$

Total People seated in Train =  $3600 + 3840 + 4500 + 2880 + 3780 + 5760$

= 24360

Female seated in Train =  $24360 - 12360 = 12000$

Coach →	A	B	C	D	E	F	Total
Male	600	2640	3900	1080	780	3360	12360
Female	3000	1200	600	1800	3000	2400	12000
Total	3600	3840	4500	2880	3780	5760	24360

**20. Ans. (B)**

Ratio =  $3600 : 4500 = 4 : 5$

**21. Ans. (A)**

Difference =  $12360 - 12000 = 360$

**22. Ans. (C)**

Passengers seated in Bus = 4440

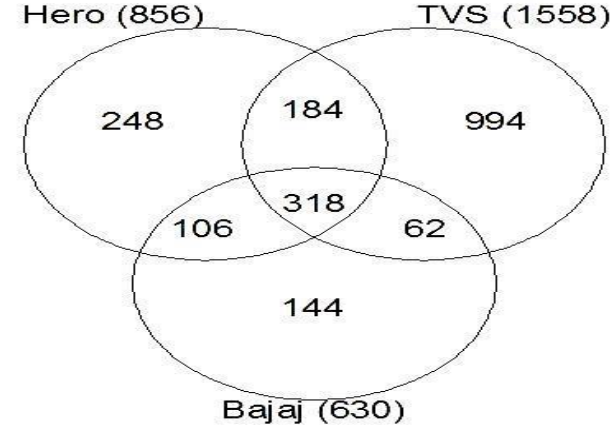
**23. Ans. (D)**

Average male passengers seated in coaches C, D & E

=  $(3900 + 1080 + 780) / 3 = 5760 / 3 = 1920$

**24. Ans. (C)**

Required % =  $(3840 - 3000) / 3000 \times 100 = 28\%$

**{25 – 29}****25) Ans. (D)**

People who have both Hero & Bajaj Bikes =  $106 + 318 = 424$

**26) Ans. (C)**

Who have all Bikes : Who have both Hero & TVS but not Bajaj

=  $318 : 184 = 159 : 92$

**27) Ans. (B)**

Who have only TVS – Who have only Bajaj =  $994 - 144 = 850$

**28) Ans. (D)**

% of people who have both Hero & Bajaj bikes with people who have Bajaj bikes =  $424 \times$

$100 / 630 = 67.3\%$

**29) Ans. (B)**

Person who have only 2 bikes =  $184 + 106 + 62 = 352$