

# MIXTURE & ALLIGATION







## ALLIGATION AND MIXTURE

**Q 1.** A vessel of 120 liters is filled with milk and water. 80% of milk and 40% of water is taken out of the vessel. It is found that the vessel is vacated by 65%. What is the ratio of milk to water?

- (1) 5 : 3      (2) 6 : 5      (3) 3 : 5      (4) 4 : 3      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 1.** A vessel of 120 liters is filled with milk and water. 80% of milk and 40% of water is taken out of the vessel. It is found that the vessel is vacated by 65%. What is the ratio of milk to water?

- (1) 5 : 3      (2) 6 : 5      (3) 3 : 5      (4) 4 : 3      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 2.** In what proportion must wheat at Rs.3.20 per kg be mixed with wheat at Rs.3.70 per kg, so that the mixture be worth Rs.3.35 a kg?

- (1) 9 : 5      (2) 7 : 5      (3) 7 : 3      (4) 3 : 1      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 2.** In what proportion must wheat at Rs.3.20 per kg be mixed with wheat at Rs.3.70 per kg, so that the mixture be worth Rs.3.35 a kg?

- (1) 9 : 5      (2) 7 : 5      **(3) 7 : 3**      (4) 3 : 1      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 3.** How much chicory at Rs 24 per kg should be added to 15 kg of tea at Rs 60 per kg, as to make the mixture worth Rs 39 per kg?

- (1) 21 kg      (2) 20 kg      (3) 27 kg      (4) 18 kg      (5) None of these

## ALLIGATION AND MIXTURE

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- (1) 21 kg      (2) 20 kg      (3) 27 kg      (4) 18 kg      (5) None of these

## ALLIGATION AND MIXTURE

**Q 4.** A mixture of a certain quantity of milk with 25 liters of water is worth Rs.2 per liter. If pure milk be worth Rs.12 per liter how much milk is there in the mixture?

- (1) 5 liters                      (2) 7 liters                      (3) 6 liters                      (4) 4 liters  
(5) None of these

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## ALLIGATION AND MIXTURE

**Q 4.** A mixture of a certain quantity of milk with 25 liters of water is worth Rs.2 per liter. If pure milk be worth Rs.12 per liter how much milk is there in the mixture?

**(1) 5 liters**

**(2) 7 liters**

**(3) 6 liters**

**(4) 4 liters**

**(5) None of these**

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**ALLIGATION AND MIXTURE**

**Q 5.** In what proportion must water be mixed with spirit to gain 16% by selling it at cost price?

- (1) 4 : 25      (2) 2 : 9      (3) 1 : 6      (4) 25 : 4      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 5.** In what proportion must water be mixed with spirit to gain 16% by selling it at cost price?

- (1) 4 : 25      (2) 2 : 9      (3) 1 : 6      (4) 25 : 4      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 6.** A person has a chemical of Rs.50 per liter. In what ratio should water be mixed in that chemical so that after selling the mixture at Rs. 40 per liter he may get a profit of 50%.

- (1) 7 : 8      (2) 9 : 8      (3) 10 : 7      (4) 4 : 3      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 6.** A person has a chemical of Rs.50 per liter. In what ratio should water be mixed in that chemical so that after selling the mixture at Rs. 40 per liter he may get a profit of 50%.

- (1) 7 : 8      (2) 9 : 8      (3) 10 : 7      (4) 4 : 3      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 7.** Prabhu purchased 30 kg of rice at the rate of Rs.17.50 per kg and another 30 kg rice at a certain rate. He mixed the two and sold the entire quantity at the rate of Rs.18.60 per kg and made 20 per cent overall profit. At what price per kg did he purchase the lot of another 30 kg rice?

- (1) 14.50      (2) 12.50      (3) 15.50      (4) 13.50      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 7.** Prabhu purchased 30 kg of rice at the rate of Rs.17.50 per kg and another 30 kg rice at a certain rate. He mixed the two and sold the entire quantity at the rate of Rs.18.60 per kg and made 20 per cent overall profit. At what price per kg did he purchase the lot of another 30 kg rice?

- (1) 14.50      (2) 12.50      (3) 15.50      **(4) 13.50**      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 8.** A petrol pump owner mixed leaded and unleaded petrol in such a way that the mixture contains 10% unleaded petrol. What quantity of leaded petrol should be added to 1 liter mixture so that the percentage of unleaded petrol becomes 5%.

- (1) 1000 ml   (2) 900 ml   (3) 1900 ml   (4) 1800 ml   (5) None of these

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## ALLIGATION AND MIXTURE

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- (1) 1000 ml   (2) 900 ml   (3) 1900 ml   (4) 1800 ml   (5) None of these

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## ALLIGATION AND MIXTURE

**Q 9.** 150 gm of sugar solution has 20% sugar in it. How much sugar should be added to make it 25% in the solution?

- (1) 10 gm      (2) 45 gm      (3) 35 gm      (4) 40 gm      (5) None of these

## ALLIGATION AND MIXTURE

**Q 9.** 150 gm of sugar solution has 20% sugar in it. How much sugar should be added to make it 25% in the solution?

- (1) 10 gm      (2) 45 gm      (3) 35 gm      (4) 40 gm      (5) None of these

## ALLIGATION AND MIXTURE

**Q 10.** There are 75 students in a class, Rs.48 are distributed among them so that each boy gets Rs.1 and each girl gets 40P. Find the number of boys and girls in that class.

- (1) 30, 45      (2) 40, 35      (3) 25, 50      (4) 35, 40      (5) None of these

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- (1) 30, 45      (2) 40, 35      (3) 25, 50      (4) 35, 40      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 11.** In a zoo, there are rabbits and pigeons. If heads are counted, there are 100 and if legs are counted, there are 290. How many rabbits are there?

- (1) 55                      (2) 45                      (3) 40                      (4) 50                      (5) None of these

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- (1) 55      **(2) 45**      (3) 40      (4) 50      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 12.** A person travels 245 km in 6 hours in two stages. In the first part of the journey, he travels by bus at the speed of 30 km/hr. In the second part of the journey, he travels by train at the speed of 50 km/hr. How much distance did he travel by train?

- (1) 162.5 km      (2) 82.5 km      (3) 164 km      (4) 83 km  
(5) None of these

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- (1) 162.5 km      (2) 82.5 km      (3) 164 km      (4) 83 km  
(5) None of these

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## ALLIGATION AND MIXTURE

- Q 13.** A trader has 25 kg of rice, part of which he sells at 4% profit and the rest at 9% profit. He gains 7% on the whole. What is the quantity sold at 9% profit?
- (1) 15 kg    (2) 10 kg    (3) 18 kg    (4) 12 kg    (5) None of these

## ALLIGATION AND MIXTURE

- Q 13.** A trader has 25 kg of rice, part of which he sells at 4% profit and the rest at 9% profit. He gains 7% on the whole. What is the quantity sold at 9% profit?
- (1) 15 kg    (2) 10 kg    (3) 18 kg    (4) 12 kg    (5) None of these

**ALLIGATION AND MIXTURE**

**Q 14.** Ritu's expenditure and saving are in the ratio 5 : 2. Her income increases by 12%. Her expenditure also increases by 14%. By how many % does her saving increase?

- (1) 14%      (2) 7%      (3) 8%      (4) 9%      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 14.** Ritu's expenditure and saving are in the ratio 5 : 2. Her income increases by 12%. Her expenditure also increases by 14%. By how many % does her saving increase?

- (1) 14%      **(2) 7%**      (3) 8%      (4) 9%      (5) None of these

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## ALLIGATION AND MIXTURE

**Q 15.** A jar contains a mixture of two liquids A and B in the ratio 3 : 1. When 15 liters of the mixture is taken out and 9 liters of liquid B is poured into the jar, the ratio becomes 3 : 4. How many liters of liquid was contained in the jar?

(1) 27 liters   (2) 24 liters   (3) 30 liters   (4) 21 liters   (5) None of these

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## ALLIGATION AND MIXTURE

**Q 15.** A jar contains a mixture of two liquids A and B in the ratio 3 : 1. When 15 liters of the mixture is taken out and 9 liters of liquid B is poured into the jar, the ratio becomes 3 : 4. How many liters of liquid was contained in the jar?

**(1) 27 liters** (2) 24 liters (3) 30 liters (4) 21 liters (5) None of these

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## ALLIGATION AND MIXTURE

**Q 16.** A vessel is filled with a liquid, 3 parts of which are water and 5 parts syrup. How much of the mixture must be drawn off and replaced with water so that the mixture may be half water and half syrup?

- (1)  $1/5$               (2)  $1/7$               (3)  $4/5$               (4)  $3/10$               (5) None of these

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## ALLIGATION AND MIXTURE

**Q 16.** A vessel is filled with a liquid, 3 parts of which are water and 5 parts syrup. How much of the mixture must be drawn off and replaced with water so that the mixture may be half water and half syrup?

(1)  $1/5$

(2)  $1/7$

(3)  $4/5$

(4)  $3/10$

(5) None of these

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## ALLIGATION AND MIXTURE

**Q 17.** A vessel contains mixture of liquids A and B in the ratio 3 : 2. When 20 liters of the mixture is taken out and replaced by 20 liters of liquid B, the ratio changes to 1 : 4. How many liters of liquid A was there initially present in the vessel?

(1) 14 liters   (2) 20 liters   (3) 18 liters   (4) 30 liters   (5) None of these

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## ALLIGATION AND MIXTURE

**Q 17.** A vessel contains mixture of liquids A and B in the ratio 3 : 2. When 20 liters of the mixture is taken out and replaced by 20 liters of liquid B, the ratio changes to 1 : 4. How many liters of liquid A was there initially present in the vessel?

- (1) 14 liters   (2) 20 liters   **(3) 18 liters**   (4) 30 liters   (5) None of these

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## ALLIGATION AND MIXTURE

**Q 18.** 56 liters of a mixture contains milk and water in the ratio 5 : 2. How much water is to be added to get a new mixture containing milk and water in the ratio 5 : 3?

- (1) 9 liters    (2) 6 liters    (3) 7 liters    (4) 8 liters    (5) None of these

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## ALLIGATION AND MIXTURE

**Q 18.** 56 liters of a mixture contains milk and water in the ratio 5 : 2. How much water is to be added to get a new mixture containing milk and water in the ratio 5 : 3?

- (1) 9 liters    (2) 6 liters    (3) 7 liters    **(4) 8 liters**    (5) None of these

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## ALLIGATION AND MIXTURE

**Q 19.** Three equal glasses are filled with mixtures of milk and water. The proportion of milk and water in each glass is as follows. In the first glass as 3 : 1, in the second glass as 5 : 3 and in the third as 9 : 7. The contents of the three glasses are emptied into a single vessel. What is the proportion of milk and water in it?

- (1) 31 : 17    (2) 17 : 31    (3) 15 : 31    (4) 31 : 15    (5) None of these

## ALLIGATION AND MIXTURE

**Q 19.** Three equal glasses are filled with mixtures of milk and water. The proportion of milk and water in each glass is as follows. In the first glass as 3 : 1, in the second glass as 5 : 3 and in the third as 9 : 7. The contents of the three glasses are emptied into a single vessel. What is the proportion of milk and water in it?

- (1) 31 : 17    (2) 17 : 31    (3) 15 : 31    (4) 31 : 15    (5) None of these

## ALLIGATION AND MIXTURE

**Q 20.** In an alloy, zinc and copper are in the ratio 3 : 4. In the second alloy the same elements are in the ratio 4 : 5. In what ratio should these two alloys be mixed to form a new alloy in which the two elements are in ratio 7 : 3?

- (1) 161 : 181                      (2) 181 : 181                      (3) 161 : 171                      (4) Not possible  
(5) None of these

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## ALLIGATION AND MIXTURE

**Q 20.** In an alloy, zinc and copper are in the ratio 3 : 4. In the second alloy the same elements are in the ratio 4 : 5. In what ratio should these two alloys be mixed to form a new alloy in which the two elements are in ratio 7 : 3?

- (1) 161 : 181      (2) 181 : 181      (3) 161 : 171      (4) Not possible  
(5) None of these

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## ALLIGATION AND MIXTURE

**Q 21.** There are two vessels of equal capacity, one full of milk, and the second one-third full of water. The second vessel is then filled up out of the first, the contents of the second are then poured back into the first till it is full and then again, the contents of the first are poured back into the second till it is full. What is the proportion of milk in the second vessel?

- (1) Cannot possible      (2)  $20/27$       (3)  $20/37$       (4)  $7/27$       (5) None of these

## ALLIGATION AND MIXTURE

**Q 21.** There are two vessels of equal capacity, one full of milk, and the second one-third full of water. The second vessel is then filled up out of the first, the contents of the second are then poured back into the first till it is full and then again, the contents of the first are poured back into the second till it is full. What is the proportion of milk in the second vessel?

- (1) Cannot possible      **(2) 20/27**      (3) 20/37      (4) 7/27      (5) None of these

## ALLIGATION AND MIXTURE

**Q 22.** From a cask of wine, containing 64 liters, 8 liters are drawn out and the cask is filled up with water. If the same process is repeated a second, then a third time, what will be the proportion of wine to water in the resulting mixture?

- (1) 343 : 169                      (2) 343 : 512                      (3) 169 : 343                      (4) 512 : 343  
(5) None of these

## ALLIGATION AND MIXTURE

**Q 22.** From a cask of wine, containing 64 liters, 8 liters are drawn out and the cask is filled up with water. If the same process is repeated a second, then a third time, what will be the proportion of wine to water in the resulting mixture?

(1) 343 : 169

(2) 343 : 512

(3) 169 : 343

(4) 512 : 343

(5) None of these



## ALLIGATION AND MIXTURE

**Q 23.** A vessel contains 24 liters of milk. 4 liters are withdrawn and replaced by water. The process is repeated a second time. Find the ratio of milk to water in the resulting mixture?

- (1) 25 : 36    (2) 36 : 11    (3) 11 : 25    (4) 25 : 11    (5) None of these

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## ALLIGATION AND MIXTURE

**Q 23.** A vessel contains 24 liters of milk. 4 liters are withdrawn and replaced by water. The process is repeated a second time. Find the ratio of milk to water in the resulting mixture?

- (1) 25 : 36    (2) 36 : 11    **(3) 11 : 25**    (4) 25 : 11    (5) None of these

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## ALLIGATION AND MIXTURE

**Q 24.** Eight liters are drawn off from a vessel full of water and substituted by pure milk. Again, eight liters of the mixture are drawn off and substituted by pure milk. If the vessel now contains water and milk in the ratio 9 : 40, find the capacity of the vessel.

(1) 14 liters   (2) 24 liters   (3) 16 liters   (4) 12 liters   (5) None of these

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## ALLIGATION AND MIXTURE

**Q 24.** Eight liters are drawn off from a vessel full of water and substituted by pure milk. Again, eight liters of the mixture are drawn off and substituted by pure milk. If the vessel now contains water and milk in the ratio 9 : 40, find the capacity of the vessel.

**(1) 14 liters** (2) 24 liters (3) 16 liters (4) 12 liters (5) None of these

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**ALLIGATION AND MIXTURE**

**Q 25.** An 25-liters cylinder contains a mixture of oxygen and nitrogen, the volume of oxygen being 25% of total volume. A few liters of the mixture is released and an equal amount of nitrogen is added. Then the same amount of the mixture as before is released and replaced by nitrogen for the second time. As a result, the oxygen content becomes 9% of the total volume. How many liters of mixture is released each time?

- (1) 15 liters                      (2) 10 liters                      (3) 14 liters                      (4) 18 liters  
(5) None of these

**ALLIGATION AND MIXTURE**

**Q 25.** An 25-liters cylinder contains a mixture of oxygen and nitrogen, the volume of oxygen being 25% of total volume. A few liters of the mixture is released and an equal amount of nitrogen is added. Then the same amount of the mixture as before is released and replaced by nitrogen for the second time. As a result, the oxygen content becomes 9% of the total volume. How many liters of mixture is released each time?

- (1) 15 liters                      **(2) 10 liters**                      (3) 14 liters                      (4) 18 liters  
(5) None of these

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# THANK YOU



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