

ALLIGATION (MIXTURE)

- In what proportion must wheat at ₹ 3.20 per kg be mixed with wheat at ₹ 3.70 per kg, so that the mixture be worth ₹ 3.35 a kg?
(1) 9 : 5 (2) 7 : 5 (3) 7 : 3
(4) 3 : 1 (5) None of these
- Prabhu purchased 30 kg of rice at the rate of ₹ 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 ₹ 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
- A mixture of a certain quantity of milk with 25 litres of water is worth ₹ 2 per litre. If pure milk be worth ₹ 12 per litre how much milk is there in the mixture?
(1) 5 litres (2) 7 litres (3) 6 litres
(4) 4 litres (5) None of these
- 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
- In what proportion must water be mixed with spirit to gain 25% by selling it at cost price?
(1) 4 : 1 (2) 3 : 4 (3) 4 : 3
(4) 1 : 4 (5) None of these
- 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 litre 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
- 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
- There are 75 students in a class, ₹ 48 are distributed among them so that each boy gets Re. 1 and each girl gets 40 P. 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
- There are 50 students in a class, ₹ 32 are distributed among them so that each boy gets Re. 1 and each girl gets 50 p. Find the number of girls and boys in that class.
(1) 14 girls, 36 boys (2) 36 girls, 14 boys
(3) 20 girls, 30 boys (4) 30 girls, 20 boys
(5) None of these
- A milk seller pays ₹ 500 per kiloliter for his milk. He adds water to it and sells the mixture at 56 P a litre, thereby making altogether 40% profit. Find the proportion of water to milk which his customers receive.
(1) 1 : 4 (2) 2 : 3 (3) 1 : 5
(4) 4 : 1 (5) None of these
- A person has a chemical of ₹ 50 per litre. In what ratio should water be mixed in that chemical so that after selling the mixture at ₹ 40 per litre he may get a profit of 50%.
(1) 7 : 8 (2) 9 : 8 (3) 10 : 7
(4) 4 : 3 (5) None of these
- 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 per hr. In the second part of the journey, he travels by train at the speed of 50 km per 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
- 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
- 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
- Sita's expenditure and saving are in the ratio 5 : 3. Her income increase by 15%. Her expenditure also increases by 9%. By how many % does her saving increase?
(1) 20% (2) 30% (3) 25%
(4) 24% (5) None of these

16. A vessel of 120 litres 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
17. 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
18. In a zoo, there are rabbits and pigeons. If heads are counted, there are 50 and if legs are counted, there are 140. How many pigeons are there?
 (1) 20 (2) 25 (3) 30
 (4) 35 (5) None of these
19. A jar contains a mixture of two liquids A and B in the ratio 3 : 1. When 15 litres of the mixture is taken out and 9 litres of liquid B is poured into the jar, the ratio becomes 3 : 4. How many litres of liquid was contained in the jar?
 (1) 27 litres (2) 24 litres (3) 30 litres
 (4) 21 litres (5) None of these
20. A vessel contains mixture of liquids A and B in the ratio 3 : 2. When 20 litres of the mixture is taken out and replaced by 20 litres of liquid B, the ratio changes to 1 : 4. How many litres of liquid A was there initially present in the vessel?
 (1) 14 litres (2) 20 litres (3) 18 litres
 (4) 30 litres (5) None of these
21. 56 litres 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 litres (2) 6 litres (3) 7 litres
 (4) 8 litres (5) None of these
22. 36 litres of a mixture contains milk and water in the ratio 2 : 1. How much water is to be added to get a new mixture containing milk and water in the ratio 1 : 1?
 (1) 12 litres (2) 16 litres (3) 8 litres
 (4) 15 litres (5) None of these
23. 25 litres of a mixture contains milk and water in the ratio 3 : 2. How much water is to be added to get a new mixture containing milk and water in the ratio 3 : 4?
 (1) 12 litres (2) 8 litres (3) 10 litres
 (4) 14 litres (5) None of these
24. 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
25. Four vessels of equal sizes contain mixture of spirit and water. The concentration of spirit in 4 vessels are 60%, 70%, 75% and 80% respectively. If all the four mixtures are mixed, find in the resultant mixture the ratio of spirit to water.
 (1) 57 : 13 (2) 23 : 57 (3) 57 : 23
 (4) 57 : 17 (5) None of these
26. Two casks of 48 and 42 litres are filled with mixtures of wine and water, the proportions in the two casks being respectively 13 : 7 and 18 : 17. If the contents of the two casks be mixed, and 20 litres of water added to the whole what will be the proportion of wine to water in the result?
 (1) 13 : 12 (2) 12 : 13 (3) 21 : 31
 (4) 31 : 21 (5) None of these
27. Three glasses of capacity 2 litres, 5 litres and 9 litres contain mixture of milk and water with milk concentrations 90%, 80% and 70% respectively. The contents of three glasses are emptied into a large vessel. Find the milk concentration and ratio of milk to water in the resultant mixture.
 (1) 121 : 39 (2) 131 : 49 (3) 39 : 121
 (4) 49 : 131 (5) None of these
28. 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
29. 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) $\frac{1}{5}$ (2) $\frac{1}{7}$ (3) $\frac{4}{5}$
 (4) $\frac{3}{10}$ (5) None of these
30. A cask contains 3 parts ale and 1 part porter. How much of the mixture must be drawn off and porter substituted in order that the resulting mixture may be half and half?
 (1) $\frac{1}{3}$ (2) $\frac{1}{2}$ (3) $\frac{1}{5}$
 (4) $\frac{2}{3}$ (5) None of these
31. How much chicory at ₹ 24 a kg should be added to 15 kg of tea at ₹ 60 a kg, as to make the mixture worth ₹ 39 a kg?
 (1) 21 kg (2) 20 kg (3) 27 kg
 (4) 18 kg (5) None of these

32. One type of liquid contains 15% of milk, the other contains 20% of milk. A can is filled with 4 parts of the first liquid and 11 parts of the second liquid. Find the percentage of milk in the new mixture.
- (1) $18\frac{1}{3}\%$ (2) 18% (3) $18\frac{2}{3}\%$
 (4) $18\frac{3}{8}\%$ (5) None of these
33. An 25-litres cylinder contains a mixture of oxygen and nitrogen, the volume of oxygen being 25% of total volume. A few litres 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 litres of mixture is released each time?
- (1) 15 litres (2) 10 litres (3) 14 litres
 (4) 18 litres (5) None of these
34. From a cask of wine, containing 64 litres, 8 litres 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
35. A vessel contains 24 litres of milk. 4 litres 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
36. Eight litres are drawn off from a vessel full of water and substituted by pure milk. Again eight litres 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 litres (2) 24 litres (3) 16 litres
 (4) 12 litres (5) None of these
37. Ten litres of wine are drawn from a vessel full of wine. It is then filled up with water. Ten litres of the mixture are drawn and the vessel is again filled up with water. The ratio of the quantity of wine now left in the vessel is to that of the water in it as 144 : 25. Find the capacity of the vessel.
- (1) 135 litres (2) 120 litres (3) 130 litres
 (4) 140 litres (5) None of these
38. 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) $\frac{20}{27}$
 (3) $\frac{20}{37}$ (4) $\frac{7}{27}$
 (5) None of these

ALLIGATION

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| 1. (3) | 2. (4) | 3. (1) | 4. (1) | 5. (4) | 6. (1) | 7. (1) | 8. (1) | 9. (2) | 10. (4) |
| 11. (1) | 12. (1) | 13. (1) | 14. (2) | 15. (3) | 16. (1) | 17. (2) | 18. (3) | 19. (1) | 20. (3) |
| 21. (4) | 22. (1) | 23. (3) | 24. (1) | 25. (3) | 26. (2) | 27. (1) | 28. (4) | 29. (1) | 30. (1) |
| 31. (1) | 32. (3) | 33. (2) | 34. (1) | 35. (4) | 36. (1) | 37. (3) | 38. (2) | | |