

## 9] MIXTURES + ALLIGATIONS

1. A vessel contains 70 litres of a mixture of milk and water contain 90% milk. Find the quantity (in litres) of water to be added to the vessel so that the percentage of milk in the new solution is 87.5%.

- (a) 1      (b) 2      (c) 3      (d) 4

2. A milkman has 20 litres of pure milk. Find the quantity (in litres) of water to be added to it so that he gets 50% profit by selling it at its cost price?

- (a) 5      (b) 10      (c) 15      (d) 20

3. A vessel contains 10 litres of pure milk. 1 litre of milk is taken out and replaced by an equal amount of water. 1 litre of mixture is taken out and replaced by an equal amount of water. Find the ratio of milk and water in the final mixture.

- (a) 81:100      (b) 81:19      (c) 19:81      (d) 19:100

4. A total of 57 sweets were distributed among 10 children such that each girl gets 5 sweets and each boy gets 6 sweets. Find the number of girls.

- (a) 6      (b) 5      (c) 4      (d) 3

5. 6 kg of sugar costing ₹10 per kg is added to 9 kg of sugar costing ₹15 per kg. At what price (in ₹) should this mixture be sold so that there is no loss or gain?

- (a) 11      (b) 12      (c) 13      (d) 14

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6. The solution of Sulphuric acid are mixed in the ratio of 3:7. The first solution contains 20% Sulphuric acid and the second solution contains 30% Sulphuric acid. Find the concentration of Sulphuric acid in the final mixture.

- (a) 25% (b) 26% (c) 27% (d) 28%

7. In an office the average salary of all the employees is £ 7000. If the average salary of the 22 executives is £ 12,000 and that of the others is £ 5000; find the total number of employees in the office.

- (a) 68 (b) 77 (c) 78 (d) 84

8. I lent a sum of money at 10% p.a interest and another sum of money at 12% p.a interest. The total money I lent equals £ 25,000. At the end of the year I received £ 2900 as total interest. Find the amount lent at 12% p.a interest.

- (a) £ 5000 (b) £ 10,000 (c) £ 15,000 (d) £ 20,000

9. How many litres of water should be added to 25 litres of milk costing £ 12 per litre, so that by selling the mixture at the cost price, profit of 20% is made?

- (a) 2 litres (b) 5 litres (c) 8 litres (d) 10 litres

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10. The two Varieties of rice are mixed in the ratio 2:5 and the mixture sold at ₹ 12 at a profit of 20%. If the first Variety Costs ₹ 7 more than Second Variety; find the Cost of the first Variety.

- (a) ₹ 7      (b) ₹ 15      (c) ₹ 16      (d) ₹ 10

11. Fresh grapes contain 84% water which raisins contain 20% water. How many kg of raisin can be made from 80kg of grapes?

- (a) 16      (b) 18      (c) 20      (d) 22

12. Two Containers contain petrol and diesel in the ratio 4:3 and 3:1. How many litres from the first container should be mixed with 16 litres from the second so that the new ratio becomes 32:19?

- (a) 35      (b) 40      (c) 50      (d) 65

13. A milkman dilutes 36 litres of pure milk with water. The percentage of milk in the solution is now 75%. How many litres of water did he add?

- (a) 4      (b) 6      (c) 9      (d) 12

14. How many litres of water should a milk add to 35 litres of milk costing ₹ 560; so that by selling the milk at ₹ 14 per litre; he recovers his cost?

- (a) 2      (b) 5      (c) 7      (d) 10

←↑→

15. From 800 litres of alcohol; 80 litres are drawn and replaced with water. 80 litres of this mixture is then again drawn and replaced with water and the process continued one more time. Find the present quantity of alcohol in the solution. (litres)

- (a) 448.2      (b) 583.2      (c) 612.1      (d) 656.7

16. In a section of class X; the average marks of 45 students is 75. If 5 other students; (from another section) join this section, the average marks increases by 2. Find the average marks of the 5 new students?

- (a) 90      (b) 85      (c) 95      (d) 82

17. In an office; the average salary of the men is ₹ 3000. The average salary of all the employees is ₹ 8000. There are 80 men in the office and the average salary of the women employees is ₹ 10,000. Find the number of women in the office.

- (a) 100      (b) 120      (c) 150      (d) 200

18. A shopkeeper mixes; two varieties of rice costing ₹ 8 per kg and ₹ 12 per kg in the ratio 1:3. If the cost of the second variety drops to ₹ 11.50 per kg; in what ratio should he now mix the two so that the cost of the mixture remains unchanged?

- (a) 2:3      (b) 1:6      (c) 3:5      (d) 2:5

## [9] MIXTURES AND ALLIGATIONS

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19. In what ratio should a shopkeeper mix tea costing ₹ 120 per kg and ₹ 180 per kg; so that by selling it at ₹ 205 per kg; he earns a profit of 25%?

- (a) 2:5      (b) 3:7      (c) 3:8      (d) 4:11

20. The vessels contain petrol and kerosene in the ratio of 2:5 and 4:3. In what ratio should the solutions in the first vessel be mixed with the solutions in the second, so as to get a solution with petrol and kerosene in the ratio 3:4?

- (a) 1:1      (b) 1:2      (c) 2:5      (d) 3:5

21. From a vessel containing only milk; 10 litres are drawn and replaced with water. 10 litres of the mixture is now taken out and replaced with water again. The ratio of milk to water now is 25:24. How many litres of milk was there initially?

- (a) 20      (b) 25      (c) 32      (d) 35

22. A vessel contains 2.5 litres of water and 10 litres of milk. 20% of the contents of the vessel are removed. To the remaining contents; x litres of water is added to reverse the ratio of water and milk. Then y litres of milk is added again to reverse the ratio of water and milk. Find y.

- (a) 100      (b) 110      (c) 120      (d) 130

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23. Two Varieties of Wheat are mixed together in the ratio 3:1. The cost price per kg of the first Variety is ₹ 7 more than Second Variety. The mixture is sold at 20% profit at ₹ 36 per kg. Find the cost price of the Second Variety; in rupees per kg?

(a) 27

(b) 26

(c) 25

(d) 24

24. Two litres of Water is added to 10 litres of 70% milk Solution. What is the Concentration of milk in the Solution now?

(a) 40%

(b)  $52\frac{2}{5}\%$

(c)  $58\frac{1}{3}\%$

(d)  $64\frac{2}{5}\%$

25. Two Vessels Contain Water and alcohol in the ratio 1:2 and 3:4. Two Solutions are then mixed <sup>by</sup> taken 6 litres from the first vessel and 35 litres from Second. Find the Ratio of alcohol to Water in the resulting Solution.

(a) 15:22

(b) 22:15

(c) 24:17

(d) 17:24