MIXTURES & ALLIGATIONS

1. 16 litres of a mixture contains milk and water in the ratio 5:3. How much milk should be removed from this mixture, so that the resulting mixture has milk and water in the ratio 4:3?

a. 4 **b.** 3 **c.** 2 **d.** 1

2. In a mixture of 80 litres, the ratio of milk and water is 4:1. If the ratio of milk and water has to become 1:4, the amount of water (in litres) to be added further is

a. 10 b. 240 c. 150 d. 180

3. A vessel contains a mixture of which 30 litres are water and 45 litres are syrup. How many litres of syrup must be drawn so that the resultant mixture contains water and syrup in the ratio 5:6?

a. 9 **b.** 10 **c.** 12 **d.** 15

4. A milk man mixes 20 litres of water with 80 litres of milk. After selling one-fourth of this mixture, he adds water to replenish the stock. What is the current proportion of water to milk?

a. 2:3 **b.** 1:2 **c.** 1:3 **d.** 3:4

5. In what ratio must a grocer mix two varieties of pulses costing Rs. 40 per kg and Rs. 50 per kg respectively so as to get a mixture worth Rs. 45 per kg?

a. 1:2 **b.** 2:3 **c.** 1:1 **d.** 3:4

6. In what ratio must a variety of rice costing Rs.36 per kg be mixed with another variety of rice costing Rs.48 per kg so that the mixture will be worth Rs.40 per kg?

a. 1:2 **b.** 2:1 **c.** 3:4 **d.** 4:3

7. In what ratio must water be mixed with milk costing Rs.12 per litre to obtain a mixture worth Rs.8 per litre?

a. 1:8 **b.** 1:2 **c.** 4:9 **d.** 4:3

8. On a certain assembly line, the rejection rate was 4% for Hyundai i10and 8% for Hyundai i20s. The combined rejection rate for the two cars was 7 percent. What was the ratio of Hyundai i20 and i10 production?

a. 3:1 **b.** 1:3 **c.** 1:2 **d.** 2:1

9. In what proportion must two varieties of corn costing Rs. 80 per kg and Rs. 60 per kg be mixed so that 10% profit is earned by selling the mixture at Rs. 77 per kg?

a. 1:1 **b.** 1:2 **c.** 2:3 **d.** 4:3

10. Priya bought two varieties of rice costing Rs. 50 per kg and Rs. 60 per kg and mixed them in some ratio. Then she sold the mixture at Rs. 67.2 per kg, making a profit of 20%. What was the ratio in which the two varieties of rice were mixed?

a. 1:5 **b.** 2:3 **c.** 2:7 **d.** 3:4

11. The cost of Type A barley is Rs. 15 per kg and Type B barley is Rs. 20 per kg. If Type A and Type B are mixed in the ratio of 3 : 7, then the price (per kg) of the mixed variety of barley will be

a. Rs. 18.5 **b.** Rs. 19 **c.** Rs. 19.5 **d.** Rs. 18

12. The cost of Kashmiri apples is Rs. 200 per dozen and that of Shimla apples is Rs. 250 per dozen. If these two varieties of apples are mixed in the ratio of 3 : 2, then the cost (per dozen)of the mixed variety will be

a. 220 **b.** 230 **c.** 210 **d.** 240

13. Two varieties of tea worth Rs. 126 per kg and Rs. 135 per kg are mixed with a third variety in the ratio 1:1:2. If the mixture is worth Rs. 153 per kg, the price (per kg) of the third variety of tea is

a. Rs. 169.5 **b.** Rs. 170 **c.** Rs. 175.5 **d.** Rs. 180

14. How many litres of 90% concentrated acid solution needs to be mixed with 75% concentrated acid solution to get a 30 litre solution of 78% concentrated acid solution?

a. 3 **b.** 4 **c.** 6 **d.** 10

15. How many litres of 100% concentrated acid needs to be added to 20 litres of 80% concentrated acid to get 95% concentrated acid?

a. 70 **b.** 60 **c.** 40 **d.** None

16. A person sold a mixture of 5% water in the milk solution. How much pure milk (in litres) must be added to 100 litres of mixture to reduce the water content to 2%?

a. 150 **b.** 180 **c.** 200 **d.** 220

17. A mixture of wine and water contains 80% wine. In 50 litres of such mixture, how many litres of water are required to increase the percentage of water to 50%?

a. 40 **b.** 30 **c.** 20 **d.** 10

18. A certain quantity of ghee contains 60% pure ghee and 40%vanaspati ghee. If 10 kg of pure ghee is added, the strength of the vanaspati ghee becomes 20%. Find the original quantity of ghee.

a. 10 kg **b.** 15 kg **c.** 25 kg **d.** 20 kg

19. A milk man mixes 400L of milk of 0.6concentration with 200L of water. What is the concentration of the resultant milk?

a. 0.3 **b.** 0.4 **c.** 0.5 **d.** 0.6

20. A dishonest milkman professes to sell his milk at cost price, but he mixes it with water and thereby gains 25%. Find the percentage of water in the mixture.

a. 10% **b.** 20% **c.** 25% **d.** 3.33%

21. A dishonest milkman professes to sell his milk at cost price, but he mixes it with water and thereby gains 50%. Find the percentage of water in the mixture.

a. 50% **b.** 33.33% **c.** 25% **d.** 20%

22. A dishonest milkman professes to sell his milk at cost price, but he mixes it with water and thereby gains X%. The percentage of water in the mixture is 16.66%. Find the value of X.

a. 10% **b.** 20% **c.** 25% **d.** 3.33%

23. A shopkeeper has 50 kg of rice. He sells a part it at 10% profit and remaining at 5% loss. He gains 7% on the whole. Find the quantity of rice sold at 10% profit.

a. 40 kg **b.** 30 kg **c.** 20 kg **d.** 10 kg

24. A merchant has 1000 kg of sugar, part of which he sells at 8% profit and the rest at 18% profit. He gains 14% on the whole. The quantity of sugar sold at 18% profit is

a. 400 **b.** 560 **c.** 600 **d.** 640

25. A business man sold $2/5^{th}$ of his stock at a gain of 20% and the rest at a gain of 15%. The overall percentage gain was

a. 113% **b.** 15% **c.** 17% **d.** 19%

26. A merchant has 5000 kg of sugar, part of which he sells at 10 % profit and the rest at 15% profit. He gains 13% on the whole. The quantity of sugar sold at 15% profit is

a. 6000 **b.** 3000 **c.** 5000 **d.** 8000

27. A man bought goods worth Rs.6000 and sold half of them at a gain of 10%. At what gain percent must he sell the remainder so as to get a gain of 25% on the whole?

a. 10% **b.** 20% **c.** 40% **d.** 45%

28. A container contains 40 litres of milk. From this container 4 litres of milk was taken out and replaced with water. This process was repeated two more times. How much milk (in litres) was present in the container in the end?

a. 26.64 **b.** 27.36 **c.** 28 **d.** 29.16

29. 8 litres of wine are drawn from a cask and is then filled with water. The operation is performed three more times. The ratio of the quantity of wine now left in the cask to that of water is 16:65. How much wine (in litres) did the cask hold initially?

a. 24 **b.** 30 **c.** 15 **d.** 40

30. A total of "a" litres of pure acid is removed from a tank containing 729 litres of pure acid and is replaced by water. The same process is repeated six times and finally the tank contains 64 litres of pure acid. Determine the value of "a" in litres.

a. 243 **b.** 81 **c.** 27 **d.** 90