ALLIGATION MIXTURE

1. In what ratio two varieties of tea one costing Rs 27 per kg and the other costing Rs 32 per kg should be blended to produce a blended variety of tea worth Rs 30 per kg. How much should be the quantity of second variety of tea, if the first variety is 60 kg?
   (1) 90 kg (2) 85 kg
   (3) 80 kg (4) 75 kg
   (5) None of these

2. Sugar at Rs 15 per kg is mixed with sugar at Rs 20 per kg in the ratio 2:3. Find the price per kg of the mixture.
   (1) Rs 19 (2) Rs 18
   (3) Rs 15 (4) Rs 20
   (5) None of these

3. How many kg of tea worth Rs 25 per kg must be blended with 30 kg of tea worth Rs 30 per kg so that by selling the blended variety at Rs 30 per kg there should be a gain of 10%?
   (1) 36 kg (2) 40 kg
   (3) 32 kg (4) 42 kg
   (5) None of these

4. There are 65 students in a class, 39 rupees are distributed among them so that each boy gets 80 P and each girl gets 30 P. Find the number of boys and girls in that class.
   (1) 43, 40 (2) 36, 33
   (3) 39, 26 (4) 45, 42
   (5) None of these

5. A trader has 50 kg of sugar, a part of which he sells at 10% profit and the rest at 5% loss. He gain 7% on the whole. What is the quantity sold at 10% gain and 5% loss?
   (1) 40 kg, 10 kg (2) 10 kg, 35 kg
   (3) 25 kg, 15 kg (4) 30 kg, 20 kg
   (5) None of these

6. A person has Rs 5000. He invests a part of it at 3% per annum and the remainder at 8% per annum simple interest. His total income in 3 years is Rs 750. Find the sum invested at different rates of interest.
   (1) Rs 2000, Rs 1000
   (2) Rs 3000, Rs 1000
   (3) Rs 1000, Rs 4000
   (4) Rs 3000, Rs 2000
   (5) None of these

7. Some amount out of Rs 7000 was lent at 6% p.a. and the remaining at 4% p.a. If the total simple interest from both the fractions in 5 years was Rs 1600, the sum lent at 6% p.a. was
   (1) Rs 3000 (2) Rs 4000
   (3) Rs 5000 (4) Rs 2000
   (5) None of these

8. In what proportion water must be added to spirit to gain 20% by selling it at the cost price?
   (1) 1 : 5 (2) 2 : 5
   (3) 3 : 5 (4) 4 : 5
   (5) None of these

9. A person covers a distance 100 kms in 10 hr, partly by walking at 7 km per hr and rest by running at 12 km per hr. Find the distance covered in each part.
   (1) 28 km, 72 km (2) 32 km, 82 km
   (3) 24 km, 68 km (4) 26 km, 70 km
   (5) None of these

10. The average weekly salary per head of all employees (supervisors and labourers) is Rs 100. The average weekly salary per head of all the supervisors is Rs 600 while the average weekly salary per head of all the labourers is Rs 75. Find the number of supervisors in the factory if there are 840 labourers in it.
    (1) 46 (2) 42
    (3) 44 (4) 48
    (5) None of these

11. A person travels 285 km in 6 hr in two stages. In the first part of the journey, he travels by bus at the speed of 40 km per hr. In the second part of the journey, he travels by train at the speed of 55 km per hr. How much distance did he travel by train?
    (1) 205 km (2) 145 km
    (3) 165 km (4) 185 km
    (5) None of these

12. A trader has 50 kg of pulses, part of which he sells at 8% profit and the rest at 18% profit. He

gains 14% on the whole. What is the quantity sold at 18% profit?

(1) 30 kg   (2) 25 kg
(3) 20 kg   (4) 40 kg
(5) None of these

13. Mira's expenditure and savings are in the ratio 3 : 2. Her income increases by 10%. Her expenditure also increases by 12%. By how many % does her savings increase?

(1) 7%   (2) 10%
(3) 9%   (4) 13%
(5) None of these

14. Two types of steel are available. Type A contains 5% of nickel and type B contains 40% of nickel. How much of each type be mixed to obtain 140 tonnes of steel containing 30% of nickel?

(1) 40,100 tonnes   (2) 50,125 tonnes
(3) 30,75 tonnes   (4) 60,180 tonnes
(5) None of these

15. Two alloys A and B contain silver and copper in the ratio 5 : 1 and 7 : 2, respectively. Find the ratio in which they be mixed such that there be 80% of silver.

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

16. In what ratio water should be mixed with a liquid at Rs. 12 per litre so that by selling the mixture at Rs.13.75 per litre, the seller gains 25%?

(a) 1 : 11   (2) 1 : 15
(3) 1 : 17   (4) 1 : 13
(5) None of these

17. A tea seller mixes two kinds of tea one at Rs. 15 kg and other at Rs. 20 per kg. In what ratio should he mix them to get the price of mixture at Rs. 16.50 per kg?

(a) 8 : 3   (2) 5 : 7
(3) 7 : 3   (4) 7 : 5
(5) None of these

18. A jar full of whisky contains 40% of alcohol. A part of this whisky is replaced by another containing 19% alcohol and now the percentage of alcohol was found to be 26. The quantity of whisky replaced by

(1) $\dfrac{2}{5}$ (2) $\dfrac{1}{5}$

(3) $\dfrac{2}{3}$ (4) $\dfrac{3}{5}$

(5) None of these

19. A part of sum of Rs 10000 is lent at 8% and the remaining sum at 10% per annum. If the average rate of interest is 9.2%, then the two parts are

(1) Rs. 4000, Rs. 6000
(2) Rs. 5500, Rs. 6000
(3) Rs. 5000, Rs. 5000
(4) Rs. 5500, Rs. 4500
(5) None of these

20. What quantity of water should be added to 3 litres of 10% solution of salt, so that it becomes 5% salt solution?

(1) 1.5 litre
(2) 2.7 litre
(3) 3 litres
(4) Cannot be determined
(5) None of these

21. Jaydeep purchased 25 kg of rice at the rate of Rs 16.80 per kg and 35 kg of rice at the rate of Rs 25.50 per kg. He mixed the two and sold the mixture. Approximately, at what price per kg did he sell the mixture to make 25 percent profit?

(1) Rs. 26.50   (2) Rs. 27.50
(3) Rs. 28.50   (4) Rs. 30.00
(5) None of these

22. A grocer purchased 20 kg of rice at the rate of Rs. 15 per kg and 30 kg of rice at the rate of 13 per kg. At what price per kg should he sell the mixture to earn 33 % profit on the cost price?

(1) Rs. 28.00   (2) Rs. 20.00
(3) Rs. 18.40   (4) Rs. 17.40
(5) None of these

23. Two varieties of soda water with different prices are mixed in the ratio of 2 : 3. The price of first soda water is Rs.10 per litre while the price of second soda water is Rs. 15 per litre, respectively. The average price of the mixture is

(1) Rs. 13   (2) Rs. 15
(3) Rs. 16   (4) Rs. 20
(5) None of these

24. 5 kg of superior quality of sugar is mixed with 25 kg of inferior quality sugar. The price of superior quality and inferior quality sugar is Rs.18 and Rs.12 respectively. The average price per kg of the mixture is

(1) Rs. 14   (2) Rs. 13
(3) Rs. 15   (4) Rs. 25
(5) None of these

25. 16 litres of kerosene is mixed with 5 litres of petrol.

The price of kerosene is Rs.12 per litres and the price of petrol is Rs.33 per litre. The average price of mixture per litres is

(1) Rs. 20   (2) Rs. 18
(3) Rs. 17   (4) Rs. 21
(5) None of these

26. Amit travels 30 minutes at the speed of 25 km/hr. Further, he travels 20 minutes at the speed of 40km/hr. Find his average speed .

(1) 30   (2) 32
(3) 28   (4) 31
(5) None of these

27. A milkman has two types of milk .In the first container the percentage of milk is 80 % and in the second container the percentage of milk is 60 %. If he mixes 28 litres of the first container to the 32 litres of milk of the second container, then the percentage of milk in the mixture is

(1) 50.33%   (2) 69.33%
(3) 70.33%   (4) 60.33%
(5) None of these

28. Modern electronics shop sold 30 % hardware at the profit of 50% and 90% software at the profit of 10%. The average profit percent of modern electronics shop is, if it sells only these two kinds of things

(1) 30   (2) 35
(3) 40   (4) 20
(5) None of these

29. Avinash covered 150 km distance in 10 hours. The first part of his journey he covered by car, then he hired a rickshaw. The speed of car and rickshaw is 20 km/hr and 12 km/hr respectively. The ratio of distance covered by car and the rickshaw respectively are:

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

30. A mixture of rice is sold at Rs 3.00 per kg .This mixture is formed by mixing the rice of Rs 2.10 and Rs. 2.52 per kg. What is the ratio of price of cheaper to the costlier quality in the mixture if the profit of 25% is being earned?

(1) 4 : 10   (2) 4 : 5
(3) 3 : 10   (4) 6 : 10
(5) None of these

31. A milkman has 20 litres of milk. If he mixes 5 litres of water, which is freely available, in 20 litres of pure milk .If the cost of pure milk is Rs 18 per litres, then the profit of the milkman ,when he sells

all the mixture at cost price is

(1) 25%   (2) 30%
(3) 45%   (4) 30%
(5) None of these

32. In what ratio should water and wine be mixed so that after selling the mixture at the cost price a profit of 33.33% is made?

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

33. In what ratio should freely available water be mixed with the wine worth Rs.60 per litres so that after selling the mixture at Rs.50 per litres, the profit will be 25%?

(1) 1 : 3   (2) 2 : 1
(3) 1 : 8   (4) 1 : 6
(5) None of these

34. How much pepsi at Rs.9 a litre is added to 15 litres of 'dew'at Rs.10 a litre so that the price of the mixture be Rs.9 a litre?

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

35. In my pocket there are Rs.25 consisting of only the denominations of 20 paise and 50 paise. Thus, there are total 80 coins in my pocket. The numbers of coins of the denomination of 50 paise is?

(1) 40   (2) 30
(3) 60   (4) 50
(5) None of these

36. There are some shepherds and their sheep in a grazing field. The number of total heads is 60 and total legs is 168 including both men and sheep. The number of sheep is

(1) 20   (2) 24
(3) 30   (4) 27
(5) None of these

37. In my office, the average age of all the females employees is 21 years and that of male employees is 32 years ,where the average age of all the (male and female) employees is 28 years. The possible number of total employees in my office could be

(1) 231   (2) 250
(3) 251   (4) 241
(5) None of these

38. A car agency has 108 cars, it sold some cars at 9 % profit and rest at 36 % profit. Thus, it gains 17 % on the sale of all its cars. The numbers of cars sold at 36% profit is?

(1) 33   (2) 35

(3) 32   (4) 36

(5) None of these

39. Rs. 69 were divided among 115 students so that each girl gets 50 paise less than a boy. Thus each boy received twice the paise as each girl received. The numbers of girls in the class is?

(1) 98   (2) 92

(3) 93   (4) 97

(5) None of these

40. In what proportion water be mixed with spirit to gain 12.5% by selling it at cost price?

(1) 1 : 8   (2) 1 : 7

(3) 1 : 6   (4) 1 : 5

(5) None of these

41. A butler stole wine from a butt of sherry containing 50% of spirit and then he replenished it by different wine containing 20% spirit. Thus there was only 30% strength (spirit) in the new mixture. How much of the original wine did he steal?

(1) 4/3   (2) 1

(3) 3/4   (4) 2/3

(5) None of these

42. Mr. Mohit purchased two toy factories ,one in india and other one in Sri Lanka for total Rs. 72 crores. Later on he sold the Indian factory at 16% profit and Sri Lankan factory at 24% profit. Thus he gained a total profit of 19%.The selling price of Indian factory is

(1) Rs.60 crores   (2) Rs.52 crores

(3) Rs.70 crores   (4) Rs.55 crores

(5) None of these

43. A milkman sells the milk at the cost price but he mixes the water (freely available) in it and thus he gains 9.09%. The quantity of water in the mixture of 1 litres is

(1) 85.33 ml   (2) 75.33 ml

(3) 65.33 ml   (4) 45.33 ml

(5) None of these

44. The price of petrol is Rs 70 per litres and the price of spirit is Rs 30 per litres. In what ratio the petrol and spirit be mixed such that the profit after selling the mixture at Rs.75 per litres be 25%?

(1) 3 : 1   (2) 2 : 3

(3) 3 : 4   (4) 4 : 3

(5) None of these

45. A trader sells total 315 mobile sets. He sells black and white mobile sets at a loss of 6% and colour mobile sets at a profit of 15%. Thus, he gains 9 % on the whole. The number of black and white mobile sets, which he has sold, is

(1) 215

(2) 315

(3) 200

(4) Cannot be determined

(5) None of these

46. In a class of 30 students, the average weight of boys is 20 kg and the average weight of the girls is 25 kg. The fraction of boys out of the total students of the class is

(1) 2 : 3   (2) 4 : 3

(3) 3 : 5   (4) 4 : 7

(5) None of these

47. Two varieties of soft drinks with different prices are mixed in the ratio of 3 : 4. The price of first soft drink is Rs.8 per litre while the price of second soft drink is Rs. 13 per litre, respectively. The average price of the mixture is?

(1) Rs. 10.50   (2) Rs. 30.10

(3) Rs. 10.14   (4) Rs. 33

(5) None of these

48. 4 kg of variety A is mixed with 14 kg Variety B. The prices of Variety A and Variety B are Rs.16 and Rs. 14 respectively. The average price per kg of the mixture is

(1) Rs. 18   (2) Rs. 20

(3) Rs. 30   (4) Rs. 16

(5) None of these

49. 9 litres of orange juice is mixed with 4 litres of apple juice. The price of orange is Rs.10 per litres and the price of apple juice is Rs. 25 per litre. The average price of mixture per litres is

(1) Rs. 20   (2) Rs. 25

(3) Rs. 30   (4) Rs. 32

(5) None of these

50. Ranjan, travelling in a car takes 50 minutes at the speed of 24 km/hr. Further, he travels 40 minutes at the speed of 35 km/hr. Find his average speed.

(1) 30 km/hr   (2) 25 km/hr

(3) 32 km/hr   (4) 28.8 km/hr

(5) None of these

51. In a tank, the percentage of a paint is 45% and in the second tank, the percentage of the same paint is 25%. If 16 litres of the first tank is mixed with 24 litres of paint of the second tank, then the percentage of paint in the mixture is

(1) 43%   (2) 33%

(3) 55%   (4) 56%

(5) None of these

52. A shopkeeper sold the 25% of sweets at the profit of 45% and 75% of sweets at the profit of 9%. The average profit percent of shopkeeper is, if it sells only these two kinds of things

(1) 20%
(2) 18%
(3) 25%
(4) 30%
(5) None of these

53. Ratan reaches his office in 5 hrs which is 125 km from his home. He covers a part of the distance by bus and another part by a second bus. The speed of the first bus and the second bus are 35 km/hr and 10 km/hr. What is the ratio of the distances covered by the first bus and the second bus?

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

54. A mixture of wheat is sold at Rs 4.00 per kg .This mixture is formed by mixing the rice of Rs 3 and Rs. 3.7 per kg. What is the ratio of price of cheaper to the costlier quality in the mixture if the profit of 30% is being earned?

(1) 5 : 1
(2) 3 : 2
(3) 10 : 1
(4) 3 : 4
(5) None of these

55. If a shopkeeper mixes 8 kg of brick powder, which is freely available, in 50 kg litres of chilly powder .If the cost of pure chilly powder is Rs 54 per kg, then the profit of the shopkeeper, when he sells all the mixture at cost price is

(1) 15%
(2) 12%
(3) 16%
(4) 13%
(5) None of these

56. In what ratio should water and wine be mixed so that after selling the mixture at the cost price, a profit of 25% is made?

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

57. In what ratio should freely available water be mixed with the wine worth Rs.70 per litres so that after selling the mixture at Rs.48 per litres, the profit will be 15%?

(1) 975 : 87
(2) 985 : 87
(3) 967 : 87
(4) 987 : 87
(5) None of these

ANSWERS

1.	1	11.	3	21.	2	31.	1	41.	4	51.	2
2.	2	12.	1	22.	3	32.	4	42.	2	52.	2
3.	1	13.	1	23.	1	33.	5	43.	5	53.	2
4.	3	14.	1	24.	2	34.	4	44.	1	54.	3
5.	1	15.	2	25.	3	35.	2	45.	5	55.	3
6.	4	16.	1	26.	4	36.	2	46.	5	56.	4
7.	4	17.	3	27.	2	37.	1	47.	3	57.	5
8.	1	18.	3	28.	4	38.	3	48.	5		
9.	1	19.	1	29.	2	39.	2	49.	5		
10.	2	20.	3	30.	3	40.	1	50.	4		