

Mixture and Alligation Questions & Concept

Word problems based on mixture and alligation are asked in the quantitative aptitude section of the various Government exams.

Mostly the number of questions asked from this section varies between 1-3 and are a bit tricky to solve. Aspirants preparing for the upcoming [Government exams](#) must practise well to be able to answer questions from this topic.

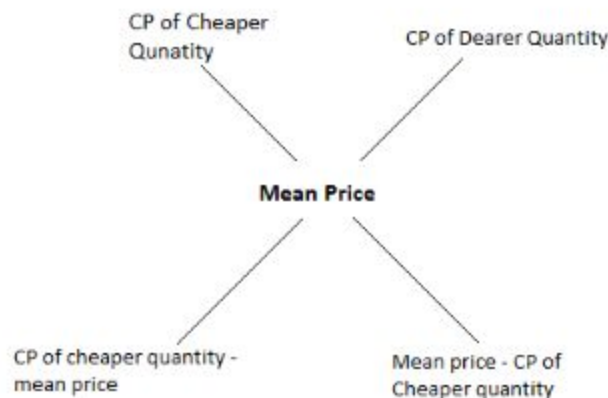
Given below are a few quantitative aptitude concept links for your assistance:

Data Interpretation	Boat and Stream	Data Sufficiency
Number Series	Pipes and Cistern Questions	Approximation and Simplification

The basic formula which is used to find the ratio in which the ingredients are mixed is

$$\frac{\text{Quantity of Cheaper}}{\text{Quantity of Dearer}} = \frac{\text{CP of Dearer} - \text{Mean Price}}{\text{Mean Price} - \text{CP of Cheaper}}$$

It is also called the **rule of alligation** and can also be represented as



Mixture and Alligation Questions

Below we have discussed a few mixture and alligation based questions for your reference and to help you assist in understanding the concept and applying the formula effectively to solve the questions.

Q 1. A grocer wishes to sell a mixture of two variety of pulses worth Rs.16 per kg. In what ratio must he mix the pulses to reach this selling price, when cost of one variety of pulses is Rs.14 per kg and the other is Rs.24 per kg?

1. 2:5
2. 4:3
3. 2:1
4. 4:1
5. 7:6

Answer: (4) 4:1

Solution:

Using the rule of alligation,

$$\frac{\text{Quantity of Dearer}}{\text{Quantity of Cheaper}} = \frac{24 - 16}{16 - 14}$$

$$\Rightarrow 8:2 = 4:1$$

Q 2. When a sugar costing Rs.9 per kg is mixed with sugar costing Rs. 27 per kg, what is the ratio in which the shopkeeper must mix the two varieties of sugar so as to sell it at Rs.10 per kg, gaining 20% profit?

1. 3:2
2. 4:1
3. 5:1
4. 2:3
5. 9:4

Answer: (3) 5:1

Solution:

Selling Price of 1kg mixed varied of sugar = Rs.10

Cost Price of the same sugar = 120% of 10 = Rs. 12

Using the rule of alligation,

Quantity of Dearer: Quantity of Cheaper = (27-12) : (12-9)

\Rightarrow Quantity of Dearer: Quantity of Cheaper = 15: 3 = 5:1

Q 3. Cost of two types of pulses is Rs.15 and Rs, 20 per kg, respectively. If both the pulses are mixed together in the ratio 2:3, then what should be the price of mixed variety pulses per kg?

1. Rs. 22 per kg
2. Rs. 30 per kg
3. Rs. 10 per kg
4. Rs. 18 per kg
5. Rs. 24 per kg

Answer: (4) Rs. 18 per kg

Solution:

Let the cost of mixed variety of pulse be Rs. x

As per the alligation rule,

$$2:3 = (20-x) : (x-15)$$

$$\Rightarrow 2x+3x = 60+30$$

$$\Rightarrow 5x = 90$$

$$\Rightarrow x = 18$$

Q 4. A dealer has 1000 kg sugar and he sells a part of it at 8% profit and the rest of it at 18% profit. The overall profit he earns is 14%. What is the quantity which is sold at 18% profit?

1. 250 kg
2. 600 kg
3. 620 kg
4. 400 kg
5. 450 kg

Answer: (2) 600 kg

Solution:

As per the rule of alligation,

$$\text{Quantity of Dearer: Quantity of Cheaper} = (18-14) : (14-8) = 4:6 = 2:3$$

$$\text{Quantity of sugar sold at 18\% profit} = \frac{2}{5} \times 1000 = 600\text{kg}$$

Q 5. How much coffee of variety A, costing Rs. 5 a kg should be added to 20 kg of Type B coffee at Rs. 12 a kg so that the cost of the two coffee variety mixture be worth Rs. 7 a kg?

1. 25 kg
2. 34 kg
3. 55 kg
4. 52 kg
5. 50 kg

Answer: (5) 50 kg

Solution:

As per the rule of alligation,

$$\text{Quantity of Dearer: Quantity of Cheaper} = (12-7) : (7-5) = 5:2$$

$$\text{Quantity of Variety A coffee that needs to be mixed} \Rightarrow 5:2 = x:20$$

$$\Rightarrow x = 50 \text{ kg}$$

The above-given questions are just a sample mixture and alligation questions. Candidates must solve more of these to get a better understanding of the topic.

Aspirants can check the links given below to prepare themselves even better for the upcoming competitive exams:

Problems on Age	Problems on Train	Important Maths Questions for SBI PO
Tips to Solve Quadratic Equations	Logical Reasoning	General English for Competitive Exams