

# CSAT

## Ratios, Mixture & Alligation

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1. There is a milk sample with 50% water in it. If  $\frac{1}{3}$ rd of this milk is added to equal amount of pure milk, then water in the new mixture will fall down to **(2017)**

- a. 25%
- b. 30%
- c. 35%
- d. 40%



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2. The monthly incomes of X and Y are in the ratio of 4 : 3 and their monthly expenses are in the ratio of 3:2. However, each saves Rs. 6,000 per month. What is their total monthly income? **(2017)**

- a. Rs. 28,000
- b. Rs. 42,000
- c. Rs. 56,000
- d. Rs. 84,000



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3. A sum of Rs. 2,500 is distributed among X, Y and Z in the ratio  $\frac{1}{2} : \frac{3}{4} : \frac{5}{6}$  . What is the difference between the maximum share and the minimum share? **(2020)**

- a. Rs. 300
- b. Rs. 350
- c. Rs. 400
- d. Rs. 450



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4. A bottle contains 20 litres of liquid A. 4 litres of liquid A is taken out of it and replaced by same quantity of liquid B. Again 4 litre of the mixture is taken out and replaced by same quantity of liquid B. What is the ratio of quantity of liquid A to that of liquid B in the final mixture? **(2020)**

- a. 4 : 1
- b. 5 : 1
- c. 16 : 9
- d. 17 : 8



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5. A student appeared in 6 papers. The maximum marks are the same for each paper. His marks in these papers are in the proportion of 5 : 6 : 7 : 8 : 9 : 10. Overall he scored 60%. In how many number of papers did he score less than 60% of the maximum marks? **(2021)**

- a. 2
- b. 3
- c. 4
- d. 5



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6. There are two containers X and Y. X contains 100 ml of milk and y contains 100 ml of water. 20 ml of milk from X is transferred to Y. After mixing well, 20 ml of the mixture in y is transferred back to X. If m denotes the proportion of milk in X and n denotes the proportion of water in Y, then which one of the following is correct? **(2022)**

- a.  $m = n$
- b.  $m > n$
- c.  $m < n$
- d. Cannot be determined due to insufficient data



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7. Ramesh, Ganesh and Brijesh charge Rs. 200, Rs. 150 and Rs. 180 per day respectively for their work. They work at a construction site, work done by them is in the ratio of 3:2:4 respectively. What will be the average labour cost for all three workers per day for the contractor at the construction site?

- (a) Rs. 180
- (b) Rs. 177
- (c) Rs. 200
- (d) Rs. 155



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8. Varun has Rs. 92 in his bag in the form of 2 rupee, 1 rupee and 20 paise coins in the ratio of 1 : 2 : 3 respectively. Then which of the following is true?

- (a) Ratio of amounts made by 2 rupee and 1 rupee coins is 1:1.
- (b) There are 40 coins of 1 rupee.
- (c) Both options (a) and (b) are true.
- (d) Both options (a) and (b) are false.



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9. Which of the following statement(s) is/are **not** correct?

**If  $a : b = 3 : 2$  and  $b : c = 7 : 4$**

- I.  $b + c$  is greater than  $a$ .
- II.  $a - c$  is greater than  $b$ .
- III.  $a/2$  is smaller than  $b$ .
- IV.  $b$  is greater than  $2c$ .

Select the answer using correct code.

- (a) Only II is not correct.
- (b) Both I and III are not correct.
- (c) Both II and IV are not correct.
- (d) Only IV is not correct.

10. 70 kg mixture of two varieties of coco powder, worth Rs. 7 per kg can be a mixture of:

- (a) 55 kg coco powder of variety P costing Rs. 6/kg and 15 kg coco powder of variety Q costing Rs. 13/kg.
- (b) 45 kg coco powder of variety P costing Rs. 3/kg and 25 kg coco powder of variety Q costing Rs. 10/kg.
- (c) 50 kg coco powder of variety P costing Rs. 5/kg and 20 kg coco powder of variety Q costing Rs. 12/kg.
- (d) None of these.



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11. Average marks of students in two groups are 30 and 40 respectively. If the students in these two groups are combined together to form a new group, then the resultant group has an average marks of 34. What must be the ratio of the number of students in first group to the number of students in second group?

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



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12. A man broke down a piece of gold into three parts in the ratio of 2 : 4 : 5 by weight and faced a loss of Rs. 15200 as a result. The price of a piece of gold is directly proportional to the square of its weight. The prices of three broken pieces of gold must be:

- (a) Rs. 1000, Rs. 2400, Rs. 6000
- (b) Rs. 800, Rs. 3200, Rs. 5000
- (c) Rs. 700, Rs. 4500, Rs. 6400
- (d) Rs. 600, Rs. 3600, Rs. 6400



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13. The total number of boys in a school is 260 at the beginning of a year. The ratio of the number of boys of age up to 16 years to those 16 years or above was 8 : 5. If 40 boys reach the age of 16 years by the end of the year, then what will the ratio become?

- (a) 6 : 7
- (b) 5 : 9
- (c) 3 : 8
- (d) 5 : 7



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14. The average consumption of milk in Baba dairy for the first four days of a week is recorded as 1.4 quintals. The consumption on the fifth and sixth day is in the ratio of 7:6. Average of the consumption on all six days is 1.8 quintals.

What is the consumption of milk on the sixth day?

- (a) 5.2 quintal
- (b) 2.4 quintal
- (c) 2.8 quintal
- (d) 2.6 quintal



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15. In a hall, the ratio of the number of men and women is 13 : 8. If 50 men go out of the hall and 50 women enter the hall, then their ratio becomes 4 : 3. The final number of women in the hall is:

- (a) 400
- (b) 450
- (c) 350
- (d) 500



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16. Three statements S1, S2 and S3 are given below followed by a question:

In a ground, there are birds and horses.

**S1:** Birds and horses in the ground are in the ratio of 14 : 8.

**S2:** Ratio of total number of heads and total number of legs in the ground is 11 : 30.

**S3:** Total number of birds and horses in the ground is 440.

**Question:** What are the total number of legs in the ground?

- (a) S1 and S2 are required to find the answer.
- (b) S2 and S3 are required to find the answer.
- (c) S1 and S3 are required to find the answer.
- (d) Both options (b) and (c) are correct

17. P saves Rs. 4500 and Q saves Rs. 10500 per month, and the ratio of their income is 2:3 respectively. If the ratio of their expenditure is 3:2 respectively, then what must be the monthly income of P?

- (a) Rs. 5000
- (b) Rs. 6500
- (c) Rs. 5600
- (d) Rs. 9000



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18. 54. Choose the correct option from the following.

- (a) Two whole numbers whose sum is 84 cannot be in the ratio 13:8.
- (b) Two whole numbers whose sum is 84 cannot be in the ratio 5:7.
- (c) Two whole numbers whose sum is 84 cannot be in the ratio 3:2.
- (d) Two whole numbers whose sum is 84 cannot be in the ratio 1:3.



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19. Two statements S1 and S2 are given below followed by a question:

**S1** : The ratio of number of males to females in a colony is 3 : 2.

**S2** : The ratio of employed to unemployed persons among males is 5 : 4.

**Question:** Find the ratio of employed males to the total number of persons in the colony.

- (a) S1 is sufficient to answer the question.
- (b) S2 is sufficient to answer the question.
- (c) S1 and S2 together are sufficient to answer the question.
- (d) S1 and S2 together are not sufficient to answer the question.

20. By how much is the fourth proportional of 11, 121 and 38 more than the third proportional of 24 and 48?

- (a) 398
- (b) 263
- (c) 322
- (d) 374



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21. A & B invested in a business. A invested Rs. 50,000. After 6 months, B joined him with a capital of Rs. 20,000. At the end of the year, what must have been the ratio in which the profit was divided between them?

- (a) 2 : 5
- (b) 5 : 1
- (c) 2 : 3
- (d) 3 : 4



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22. Two numbers are in ratio of 6 : 11. If 20 is added to each number, then new numbers are in ratio of 2 : 3. What will be the ratio of the numbers if 5 is subtracted from each number?

- (a) 2 : 3
- (b) 20 : 55
- (c) 25 : 55
- (d) 1 : 2



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23. The total number of students in a class is 400. The ratio of number of students who like Arts and the ones who like Science is 3 : 5. The number of students who like Science is more than the ones who like Arts by how much?

- (a) 140
- (b) 100
- (c) 180
- (d) 160



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24. In which of the following options is the ratio between two numbers 4:5?

- (a) Two numbers are respectively 30% and 50% more than a third number.
- (b) Two numbers are respectively 40% and 50% more than a third number
- (c) Two numbers are respectively 20% and 50% more than a third number
- (d) None of these



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25. If A is the mean proportional between 9 and 4, and B is the mean proportional between 12 and 3, then what is the mean proportional between A and B?

- (a) 2
- (b) 8
- (c) 6
- (d) 4



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# Keys

1-A	6-A	11-B	16-D	21-B
2-B	7-A	12-B	17-D	22-D
3-C	8-C	13-A	18-C	23-B
4-C	9-C	14-B	19-C	24-C
5-B	10-C	15-B	20-C	25-C



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