

1. Ratios

If $\frac{a}{b} = \frac{1}{3}$, $\frac{b}{c} = 2$, $\frac{c}{d} = \frac{1}{2}$, $\frac{d}{e} = 3$ and $\frac{e}{f} = \frac{1}{4}$,

then what is the value of $\frac{abc}{def}$?

- (1) $\frac{3}{8}$ (2) $\frac{27}{8}$ (3) $\frac{3}{4}$ (4) $\frac{27}{4}$

2. Salaries of Aman, Balram, Chandan and Dhiraj are in the ratio 2:5:3:7. If Dhiraj gets 40,000 more salary than Balram. Find the Salary of Aman in '000?

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

3. A student took five papers in an examination, where the full marks were the same for each paper. His marks in these papers were in the proportion of 6 : 7 : 8 : 9 : 10. In all papers together, the candidate obtained 60% of the total marks. Then the number of papers in which he got more than 50% marks is

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

4. Mayank, Mirza, Little and Jaspal bought a motorbike for \$60. Mayank paid one-half of the sum of the amounts paid by the other boys. Mirza paid one-third of the sum of the amounts paid by the other boys. Little paid one-fourth of the sum of the amounts paid by the other boys. How much did Jaspal have to pay?

1. \$15 2. \$13 3. \$17 4. None

5. Alphonso, on his death bed, keeps half his property for his wife and divide the rest equally among his three sons Ben, Carl and Dave. Some years later Ben dies leaving half his property to his widow and half to his brothers Carl and Dave together, shared equally. When Carl makes his will he keeps half his property for his widow and the rest he bequeaths to his younger brother Dave. When Dave dies some years later, he keeps half his property for his widow and the remaining for his mother. The mother now has Rs. 1,575,000. What was the worth of the total property in Lacs?

- (a) 30 (b) 8 (c) 18 (d) 24

Mixtures

6. Company plans to launch a new channel CMAT Tv and targets 42% viewership. It plans to capture viewership from CAT Tv and MAT Tv, which currently holds 34% and 48%, each having distinct target audience. In what ratio he should capture from the two channel?

- (a) 9 : 1 (b) 6 : 7 (c) 11 : 9 (d) 7 : 9

7. A man buys spirit at Rs. 60 per litre, adds water to it and then sells it at Rs. 75 per litre. What is the ratio of spirit to water if his profit in the deal is 37.5%?

- (a) 9 : 1 (b) 10 : 1 (c) 11 : 1 (d) None

8. Two liquids A and B are in the ratio 5 : 1 in container 1 and 1 : 3 in container 2.

In what ratio should the contents of the two containers be mixed so as to obtain a mixture of A and B in the ratio 1 : 1?
a. 2 : 3 b. 4 : 3 c. 3 : 2 d. 3 : 4

9. A milkman mixes 20 litres of water with 80 litres of milk. After selling one-fourth of this mixture, he adds water to replenish the quantity that he had sold. What is the current proportion of water to milk?

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

10. There are two containers: the first contains 500 ml of alcohol, while the second contains 500 ml of water. Three cups of alcohol from the first container is taken out and is mixed well in the second container. Then three cups of this mixture is taken out and is mixed in the first container.

Let A denote the proportion of water in the first container and B denote the proportion of alcohol in the second container. Then

- a. $A > B$ b. $A < B$ c. $A = B$ d. Cannot be determined

Average

11. Consider a sequence of seven consecutive integers. The average of the first five integers is n. The average of all the seven integers is ? (where k is a function of n)

- a. n b. $n + 1$ c. $k \times n$ d. $n + (2/7)$

12. Three classes X, Y and Z take an algebra test.

The average score in class X is 83.

The average score in class Y is 76.

The average score in class Z is 85.

The average score of all in classes X and Y together is 79.

The average score of all in classes Y and Z together is 81.

What is the average for all the three classes?

- a. 81 b. 81.5 c. 82 d. 84.5

Variation

13. Distance travelled by car varies as the speed, if its time remains constant, and it varies as the time, if the speed remains constant. If the speed of car is 10 and time taken is 20 then the distance travelled is 400. what should be the distance travelled be if the value of the speed is 5 and time taken is 15?

- a. 160 b. 2 c. 150 d. 75

14. The value of each of a set of coins varies as the square of its diameter, if its thickness remains constant, and it varies as the thickness, if the diameter remains constant. If the diameter of two coins are in the ratio 4 : 3, what should be the ratio of their thickness' be if the value of the first is four times that of the second?

- a. 16 : 9 b. 9 : 4 c. 9 : 16 d. 4 : 9

15. The cost of diamond varies directly as the square of its weight. Once, this diamond broke into four pieces with weights in the ratio 1 : 2 : 3 : 4. When the pieces were sold,

the merchant got Rs. 70,000 less. Find the original price of the diamond in Lacs
a. Rs. 1.4 b. Rs. 2 c. Rs. 1 d. Rs. 2.1

Percentages

16. Forty per cent of the employees of a certain company are men, and 75% of the men earn more than Rs. 25,000 per year. If 45% of the company's employees earn more than Rs. 25,000 per year, what fraction of the women employed by the company earn less than or equal to Rs. 25,000 per year?
a. $\frac{1}{4}$ b. $\frac{3}{7}$ c. $\frac{3}{4}$ d. $\frac{5}{9}$

17. $\frac{2}{5}$ of the voters promise to vote for P and the rest promised to vote for Q. Of these, on the last day 15% of the voters went back of their promise to vote for P and 25% of voters went back of their promise to vote for Q, and P lost by 2 votes. Then the total number of voters is
a. 100 b. 110 c. 90 d. 95

18. A college has raised 75% of the amount it needs for a new building by receiving an average donation of Rs. 600 from the people already solicited. The people already solicited represent 60% of the people the college will ask for donations. If the college is to raise exactly the amount needed for the new building, what should be the average donation from the remaining people to be solicited?
a. Rs. 300 b. Rs. 250 c. Rs. 400 d. 500

Percentage Increase

19. At the end of year 1998, Shepard bought nine dozen goats. Henceforth, every year he added p% of the goats at the beginning of the year and sold q% of the goats at the end of the year where $p > 0$ and $q > 0$. If Shepard had nine dozen goats at the end of year 2002, after making the sales for that year, which of the following is true?
1. $p = q$ 2. $p < q$ 3. $p > q$ 4. $p = \frac{q}{2}$

20. A single gain equal to successive gain of 10% and 20% is ?
(a) 10% (b) 28% (c) 25% (d) 32%

21. A single discount equal to discount series of 10% and 20% is ?
(a) 10% (b) 28% (c) 25% (d) 32%

22. The rate of inflation was 1000%. Then what will be the cost of an article, which costs 6 units of currency now, 2 years from now?
a. 666 b. 660 c. 720 d. 726

23. Ram purchased a flat at Rs. 1 lakh and Prem purchased a plot of land worth Rs. 1.1 lakh. The respective annual rates at which the prices of the flat and the plot increased were 10% and 5%. After two years they exchanged their belongings and one paid the other the difference. Then
a. Ram paid Rs. 275 to Prem b. Ram paid Rs. 475 to Prem

c. Ram paid Rs. 375 to Prem d. Prem paid Rs. 475 to Ram

24. The price of a Maruti car rises by 30% while the sales of the car come down by 20%. What is the percentage change in the total revenue?
a. -4% b. -2% c. +4% d. +2%

25. When the price of the radio was increased by 20% its sales decreased by 40%. What was the next effect on revenues?
a. -14% b. -25% c. +42% d. -28%

26. After allowing a discount of 11.11%, a trader still makes a gain of 14.28%. At how many percentage above the cost price does he mark on his goods?
a. 28.56% b. 35% c. 22.22% d. None of these

27. A dealer offers a cash discount of 20% and still makes a profit of 20%, when he further allows 16 articles to a dozen to a particularly sticky bargainer. How much percent above the cost price were his wares listed?
(a) 100% (b) 80% (c) 75% (d) $66\frac{2}{3}\%$

28. Instead of a metre scale, a cloth merchant uses a 120 cm scale while buying, but uses an 80 cm scale while selling the same cloth. If he offers a discount of 20% on cash payment, what is his overall profit percentage?
a. 20% b. 25% c. 40% d. 15%

29. One bacterium splits into eight bacteria of the next generation. But due to environmental condition only 50% survives and remaining 50% dies after producing next generation. If the seventh generation number is 4,096 million, what is the number in first generation?
a. 1 million b. 2 million c. 4 million d. 8 million

TSD

30. In a race of 200 m run, A beats S by 20 m and N by 40 m. If S and N are running a race of 100 m with exactly same speed as before, then by how many metres will S beat N?
a. 11.11 m b. 10 m c. 12 m d. 25 m

31. In a mile race, Akshay can be given a start of 128 m by Bhairav. If Bhairav can give Chinmay a start of 4 m in a 100 m dash, then who out of Akshay and Chinmay will win a race of one and half miles, and what will be the final lead given by the winner to the loser? (One mile is 1,600 m.)

a. Akshay, $\frac{1}{12}$ mile b. Chinmay, $\frac{1}{32}$ mile
c. Akshay, $\frac{1}{24}$ mile d. Chinmay, $\frac{1}{16}$ mile