

Percentages

Model 1: Basic Percentage

1. Sameer spends 20% of his monthly salary on house-rent, 25% on food, 10% on transportation, 15% on education of his children and 18% on household expenses. He saves the remaining amount of ₹ 4800. What is his monthly salary?

1) ₹ 40000 2) ₹ 28000 3) ₹ 32000 4) ₹ 36000 5) None of these

2. Ishan spent ₹ 35,645 on buying a bike, ₹ 24,355 on buying a television, and the remaining 20% of the total amount he had as cash with him. What was the total amount?

₹ 60,000 2) ₹ 72,000 3) ₹ 75,000 4) ₹ 80,000 5) None of these

3. Sujatha invests 7% i.e. ₹ 2170, of her monthly salary in mutual funds. Later she invests 18% of her monthly salary in recurring deposits. Also she invests 6% of her salary on NSC's. What is the total annual income invested by Sujata?

1) ₹ 125320 2) ₹ 113520 3) ₹ 135120 4) ₹ 115320 5) None of these


4. Sonali invests 15% of her monthly salary in insurance policies. She spends 55% of her monthly salary in shopping and on household expenses. She saves the remaining amount of ₹ 12750. What is Sonali's monthly income?

1) ₹ 42,500 2) ₹ 38,800 3) ₹ 40,000 4) ₹ 35,500 5) None of these

5. Gaurav spends 40% of the amount he received from father on hostel expenses, 20% on books and stationery and 50% of the remaining on transport. He saves ₹ 450 which is half the remaining amount after spending on hostel expenses, books and stationery and transport. How much money did he get from his father?

1) ₹ 3000 2) ₹ 6000 3) ₹ 4500 4) ₹ 5000 5) None of these


Model 2: Percentage of Percentage

6. Prerna decided to donate 30% of her monthly income to an orphanage. But on the day of  donation, she changed her mind and donated ₹ 4200, which is 70% of what she had decided earlier. What should be the actual donation as per her earlier decision?

- 1) ₹ 8000 2) ₹ 5000 3) ₹ 6,000
4) Cannot be determined 5) None of these

7. Praveen decided to donate 15% of his salary to a charity. On the day of donation he changed his mind and donated ₹ 1,896, which was 80% of what he had decided earlier. How much is Praveen's salary?

- 1) ₹ 18,500 2) ₹ 10,250 3) ₹ 15,800
4) Cannot be determined 5) None of these

8. The price of a car is ₹ 5, 00,000. It was insured to 90% of its price. The car got completely  damaged in an accident and the insurance company paid 80% of the insured amount. That is the difference between the price of the car and the amount of insurance received?

- 1) ₹ 1, 40,000 2) ₹ 40,000 3) ₹ 70,000 4) ₹ 80,000 5) None of these

9. The price of a car is ₹ 325000. It was insured to 85% of its price. The car was damaged completely in an accident and the insurance company paid 90% of the insurance. What was the difference between the price of the car and the amount received?

- 1) ₹ 32500 2) ₹ 48750 3) ₹ 76375 4) ₹ 81250 5) None of these

10. 15% of 45% of a number is 105.3. What is 24% of that number?

- 1) 385.5 2) 374.4 3) 390 4) 375 5) None of these

11. 20% of 65% of a number is 130. What is 54% of that number?

- 1) 250 2) 540 3) 260 4) 275 5) None of these

Model 3: Election Problem

12. In an election between two candidates, the winner secured 58% of the total votes cast and



wins by a majority of 2400 votes. How many votes did the loser get?

- 1) 6300 2) 7200 3) 3700 4) 4400 5) None of these

13. In an election between two candidates, one gets 72% of the total votes. If the total votes are 8200, by how many votes did the winner win the election?

- 1) 1835 2) 1722 3) 3608 4) 4428 5) None of these

14. In a college election between two students, 10% of the votes cast are invalid. The winner



gets 70% of the valid votes and defeats the loser by 1800 votes. How many votes were totally cast?

- 1) 1800 2) 7200 3) 5000 4) 3600 5) None of these

15. In a college election fought between two candidates, one candidate got 55% of the total valid votes. 15% of the votes were invalid. If the total votes were 15,200, what is the number of valid votes the other candidate got?

- 1) 7106 2) 6840 3) 8360 4) 5814 5) None of these

Model 4: Election Problem

16. In an examination, Ramesh scored 30% less than Suresh and Mahesh scored 20% less than



Suresh. Ramesh's score is what per cent of Mahesh's score?

- 1) 80% 2) 70% 3) 40% 4) 87.5% 5) None of these

17. 65 is what % of 50?

- 1) 250 2) 240 3) 160 4) 130 5) None of these

Model 5: A Is What Percent More/Less than B

18. If A's salary is 25% more than B's salary, then by what per cent is B's salary less than A's salary?



- 1) 25% 2) 20% 3) 16.66%
4) Cannot be determined 5) None of these

19. If Arjun's salary is 20% more than that of Bheem, then how much percent is Bheem's salary less than that of Arjun?

- 1) 16.66% 2) 20% 3) 40% 4) 10% 5) None of these

20. The sale of Company N is 40% less than that of Company T. Then by what per cent is the sale of company T more than that of N?



- 1) 66% 2) 20% 3) 40% 4) 10% 5) None of these

21. If A's salary is 25% less than B's salary, then B's salary is what % more than A's salary?

- 1) Cannot be determined 2) 21 3) 33.33
4) 25 5) 20

Model 6: Percentage Change

22. The profit made by a company in the present year is ₹ 15, 00,000. Two years ago, the profit made by the same company was ₹ 24, 00,000. What is the percentage change in the profit made by the company?



- 1) 66.66% inc 2) 66.66% dec 3) 37.5% inc 4) 37.5% dec 5) None of these

Model 7: Effective Percentage Change

23. The length of a rectangle increased by 40% and its breadth increased by 20%. What will be



the percentage change in the area of the rectangle?

- 1) 50% inc 2) 10% inc 3) 44% inc 4) 68% inc 5) None of these

24. The population of a town was 48600. It increased by 25% in the first year and decreased by 8% in the second year. What will be the population of the town at the end of two years?

- 1) 65610 2) 55580 3) 60750 4) 64850 5) None of these

25. The revenue of a shop in the month of March was ₹ 40,000. In the month of April, the shopkeeper announced a discount of 20% and hence his sales went up by 20%. What will be the revenue in the month of April?



- 1) ₹ 40,000 2) ₹ 50,000 3) ₹ 38,400 4) ₹ 64,800 5) None of these

26. When the cost of petroleum increases by 40%, a man reduces his annual consumption by 20%. Find the percentage change in his annual expenditure on petroleum.

- 1) 20% 2) 16% 3) 12% 4) 40% 5) None of these

27. The price of sugar increased by 25%. What should be the percentage decrease in the consumption of sugar by a family, such that their expenditure on sugar remains the same?



- 1) 20% 2) 16% 3) 12% 4) 40% 5) None of these

28. If the cost of coriander sold is increased by 33.33%. What should be the % decrease in consumption to keep expenditure same?

- 1) 29% 2) 25% 3) 30% 4) 25% 5) None of these

Model 8: Miscellaneous

29. A student has to secure 40% marks to pass an examination. He secured 75 marks and was



declared FAIL 45 marks. Find the maximum marks set for the examination.

- 1) 600 2) 200 3) 100 4) 300 5) None of these

30. In an examination, the cut off mark is 40% and a student is declared to be failed by 4 marks when he scored 38%. What is the maximum score a student can get in this exam?

- 1) 100 2) 300 3) 400 4) 200 5) None of these

31. A student has to secure 30% marks to get through. If he gets 40 marks and fails by 20 marks, find the maximum marks set for the examination.

- 1) 600 2) 200 3) 100 4) 300 5) None of these

32. 75% of a number when added to 75 becomes the number itself. The number is:



- 1) 150 2) 200 3) 225 4) 300 5) None of these

33. Difference between 54% of a number and 63% of the same number is 72. What is 80% of that number?

- 1) 720 2) 600 3) 640 4) 900 5) None of these

34. If 25% of a number is subtracted from a second number, the second number reduces to its five - sixth. What is the ratio of the first number to the second number?

- 1) 1:3 2) 2:3 3) 3:2
4) Data inadequate 5) None of these

35. 75% of a number is equal to four-fifths of another number. What is the ratio between the first number and the second number?

- 1) 5:3 2) 15:16 3) 3:5 4) 16:15 5) None of these

36. Two-fifth of one-third of three-seventh of a number is 15. What is 40% of that number?

- 1) 72 2) 84 3) 136 4) 140 5) None of these

37. In a test consisting of 300 questions, Deepika answered 40% of the first 100 questions correctly. What per cent of the remaining 200 questions does she need to answer correctly for her grade on the entire exam to be 50%?

- 1) 75% 2) 55% 3) 60%
4) Cannot be determined 5) None of these

38. In a class of 50 students and 5 teachers, each student got sweets that are 12% of the total number of students and each teacher got sweets that are 20% of the total number of students. How many sweets were there?

- 1) 345 2) 365 3) 330 4) 350 5) None of these

39. The income of A is 150% of the income of B and the income of C is 120% of the income of A. If the total income of A, B and C together is ₹ 86,000, what is C's income?

- 1) ₹ 30,000 2) ₹ 32,000 3) ₹ 20,000 4) ₹ 36,000 5) None of these

40. The price of sugar falls by 12%. How many quintals can be bought for the same money which was sufficient to buy 44 quintals at the higher price?

- 1) 54 2) 50 3) 38 4) 48 5) None of these

Answers

1 - 1	2 - 3	3 - 4	4 - 1	5 - 3	6 - 3	7 - 3	8 - 1	9 - 3	10 - 2
11 - 2	12 - 1	13 - 3	14 - 3	15 - 4	16 - 4	17 - 4	18 - 2	19 - 1	20 - 1
21 - 3	22 - 4	23 - 4	24 - 5	25 - 3	26 - 3	27 - 1	28 - 4	29 - 4	30 - 4
31 - 2	32 - 4	33 - 3	34 - 2	35 - 4	36 - 5	37 - 2	38 - 4	39 - 4	40 - 2

Additional Examples

1. One side of a square is increased by 30%. To maintain the same area, the other side will have



to be decreased by

- a) $23\frac{1}{13}\%$ b) $76\frac{12}{13}\%$ c) 30% d) 15%

2. If the radius of a circle is increased by 50%, its area is increased by



- a) 125% b) 100% c) 75% d) 50%

3. The value of a machine depreciates every year by 10%. If its present value is ₹ 50,000 then



the value of the machine after 2 years is

- a) ₹ 40,050 b) ₹ 45,000 c) ₹ 40,005 d) ₹ 40,500

4. When the price of sugar decreases by 10%, a man could buy 1 kg more for ₹ 270. Then the



original price of sugar per kg is

- a) ₹ 25 b) ₹ 30 c) ₹ 27 d) ₹ 32

5. A reduction of 20% in the price of an apple enables a man to buy 10 apples more for ₹ 54.



The reduced price of apple per dozen is

- a) ₹ 4.32 b) ₹ 12.96 c) ₹ 10.80 d) ₹ 14.40

6. If 30% of A is added to 40% of B, the answer is 80% of B. What percentage of A is B?



- a) 30% b) 40% c) 70% d) 75%

7. If 90% of A = 30% of B and B = 2x% of A, then the value of x is



- a) 450 b) 400 c) 300 d) 150

8. The cost of an apple is twice that of a banana and the cost of a banana is 25% less than that of a guava. If the cost of each type of fruit increases by 10%, then the percentage increases in cost of 4 bananas, 2 apples and 3 guavas is



- a) 10% b) 12% c) 16% d) 18%

9. Arvind purchased a wrist watch with 30% discount on the labeled price. He sold it with 40% profit on the price he brought. What was his percent loss on the labeled price?

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

10. The value of x, when 5% of $\sqrt{2x}$ is 0.01 will be

- a) 0.02 b) 0.01 c) 0.05 d) 0.03

11. A man invested $\frac{1}{3}$ of his capital at 7%, $\frac{1}{4}$ at 8% and the remainder at 10%. If his annual income is ₹ 561, then capital is

- a) ₹ 5400 b) ₹ 6000 c) ₹ 6600 d) ₹ 7200

12. Given A is 50% larger than C and B is 25% large than C, then A is what per cent larger than B?
- a) 25% b) 50% c) 75% d) 20%
13. The number of seats in an auditorium is increased by 25%. The price of a ticket is also increased by 12%. Then the increase in revenue collection will be_
- a) 40% b) 35% c) 45% d) 48%
14. A box has 100 blue balls, 50 red balls, 50 black balls. 25% of blue balls and 50% of red balls are taken away. % of black balls at present is
- a) 50% b) 25% c) $33\frac{1}{3}\%$ d) 40%
15. In a school, 10% of number of girls is equal to $\frac{1}{20}$ of the number of boys. Ratio between the number of boys to number of girls is –
- a) 1:2 b) 2:1 c) 1:4 d) 4:1
16. Price of a commodity has increased by 60%. By what per cent must a consumer reduce the consumption of the commodity so as not to increase the expenditure?
- a) 37 b) 37.5 c) 40.5 d) 60
17. If the price of sugar is raised by 25%, find by how much per cent a householder must reduce his consumption of sugar so as not to increase his expenditure?
- a) 10 b) 20 c) 18 d) 25
18. If 90% of A = 30% of B and B = x% of A, then the value of x is
- a) 800 b) 300 c) 700 d) 400

19. A reduction of 20% in the price of sugar enables me to purchase 5 kg more for ₹ 600. Find the price of sugar per kg before reduction of price.
- a) ₹ 24 b) ₹ 30 c) ₹ 32 d) ₹ 36
20. The price of a commodity rises from ₹ 6 per kg to ₹ 7.50 per kg. If the expenditure cannot increase, the percentage of reduction in consumption is
- a) 15 b) 20 c) 25 d) 30
21. First and second numbers are less than a third number by 30% and 37% respectively. The second number is less than the first by
- a) 7% b) 4% c) 3% d) 10%
22. When the price of an article was reduced by 20%, its sale increased by 80%. What was the net effect on the sale?
- a) 44% increase b) 44% decrease
c) 66% increase d) 75% increase
23. The price of sugar goes up by 20%. If a housewife wants the expenses on sugar to remain the same, she should reduce the consumption by
- a) $15\frac{1}{5}\%$ b) $16\frac{2}{3}\%$ c) 20% d) 25%
24. In a factory 60% of the workers are above 30 years and of these 75% are males and the rest are females. If there are 1350 male workers above 30 years, the total number of workers in the factory is
- a) 3000 b) 2000 c) 1800 d) 1500
25. If A's income is 50% less than that of B's, then B's income is what per cent more than that of A?
- a) 125 b) 100 c) 75 d) 50

26. 1.14 expressed as a per cent of 1.9 is

- a) 6% b) 10% c) 60% d) 90%

27. If 60% of A = $\frac{3}{4}$ of B, then A : B is

- a) 9:20 b) 20:9 c) 4:5 d) 5:4

28. Two successive price increases of 10% and 10% of an article are equivalent to a single price increase of

- a) 19% b) 20% c) 21% d) 22%

Answers

1 - a	2 - a	3 - d	4 - b	5 - b	6 - d	7 - d	8 - a	9 - c	10 - a
11 - c	12 - d	13 - a	14 - c	15 - b	16 - b	17 - b	18 - b	19 - b	20 - b
21 - d	22 - a	23 - b	24 - a	25 - b	26 - c	27 - d	28 - c		