## Number Systems

1. Find the LCM of 24, 36, and 48.
2. Determine the HCF of 108 and 144.
3. Simplify: (2/3 + 3/4) ÷ (1/2 - 1/3)
4. Convert 0.125 into a fraction.
5. Find the square root of 1296.
6. Calculate the cube root of 2197.

Percentages

7. If 20% of a number is 60, find the number.
8. Increase 450 by 15%.
9. Decrease 800 by 25%.
10. If the price of an item increases by 20% and then decreases by 10%, what is the net percentage change?
11. A shopkeeper buys an article for Rs. 800 and sells it at a profit of 25%. Find the selling price.
12. A man loses 20% of his money. After spending 25% of the remainder, he is left with Rs. 480. How much money did he have initially?

Profit and Loss

13. A shopkeeper buys a product for Rs. 500 and sells it for Rs. 600. Find the profit percentage.
14. A man buys an article for Rs. 400 and sells it at a loss of 10%. Find the selling price.
15. If the cost price of an article is 80% of its selling price, find the profit percentage.
16. A shopkeeper allows a discount of 10% on the marked price of an article and still makes a profit of 20%. If the cost price of the article is Rs. 800, find the marked price.

Ratio and Proportion

17. Divide Rs. 600 in the ratio 2:3:5.
18. If a:b = 3:4 and b:c = 2:3, find a:c.
19. If 30 men can do a piece of work in 20 days, how many men will be required to do the same work in 15 days?
20. If a train covers 120 km in 2 hours, how long will it take to cover 300 km at the same speed?

Time and Work

21. A can do a piece of work in 10 days and B can do the same work in 15 days. How long will they take to complete the work if they work together?

22. A and B can do a piece of work in 12 days, B and C can do it in 15 days, and A and C can do it in 20 days. How long will they take to complete the work if they work together?
23. A pipe can fill a tank in 6 hours, while another pipe can empty it in 8 hours. If both pipes are opened together, how long will it take to fill the tank?
24. A man can do a piece of work in 15 days. He works for 5 days and then another man joins him. They complete the work in 4 more days. How long would the second man take to do the whole work alone?

Simple Interest

25. Find the simple interest on Rs. 5000 at 10% per annum for 3 years.
26. At what rate of simple interest will Rs. 800 amount to Rs. 920 in 5 years?

Compound Interest

27. Find the compound interest on Rs. 10,000 at 10% per annum for 2 years compounded annually.
28. What will be the amount after 2 years if Rs. 5000 is invested at 12% per annum compounded half-yearly?

Average

29. Find the average of 12, 15, 18, and 21.
30. The average age of 40 students is 15 years. If the age of the teacher is included, the average age becomes 16 years. Find the age of the teacher.

Number Series

31. Find the next number in the series: 2, 4, 8, 16, ...
32. Find the missing number in the series: 3, 6, 11, 18, ...

Miscellaneous

33. A train 120 meters long takes 10 seconds to cross a platform 280 meters long. Find the speed of the train in km/hr.
34. A man walks at a speed of 5 km/hr and covers a certain distance in 2 hours. How long will he take to cover the same distance if he walks at a speed of 4 km/hr?
35. The ratio of the ages of A and B is 3:4. Six years ago, the ratio of their ages was 5:7. Find their present ages.
36. A boat can travel 30 km downstream in 2 hours and 20 km upstream in 4 hours. Find the speed of the boat in still water and the speed of the stream.
37. A mixture contains milk and water in the ratio 3:1. If 10 liters of water is added to the mixture, the ratio becomes 2:1. Find the quantity of milk in the original mixture.

38. The population of a town increases by 10% every year. If the present population is 12100, what was the population 2 years ago?
39. A sum of money becomes double itself in 5 years at simple interest. In how many years will it become four times itself at the same rate of interest?
40. A man covers a certain distance at a speed of x km/hr and returns to the starting point at a speed of y km/hr. Find his average speed for the whole journey.