RATIO AND PROPORTION

1. Find a fourth proportional to the numbers 6, 8, 9.
   (a) 12 (b) 7
   (c) 5 (d) 14
   (e) None of these
2. Find a third proportional to the numbers 3 and 6.
   (a) 21 (b) 1.5
   (c) 18 (d) 12
   (e) None of these
3. Two numbers are in the ratio of 9 : 11. If sum of these two numbers is 660, find the difference between the numbers.
   (a) 66 (b) 56
   (c) 46 (d) 76
   (e) None of these
4. A bag contains rupee, 50-paise and 25-paise coins in the ratio 5 : 7 : 9. If the total amount in the bag is ` 430, find the number of coins of each kind.
   (a) 200, 280, 360 (b) 280, 200, 360
   (c) 360, 280, 200 (d) 360, 200, 280
   (e) None of these
5. A bag contains an equal number of 50-paise, 25-paise, 20 paise and 5-paise coins respectively. If the total value is ` 40, how many coins of each type are there?
   (a) 40 (b) 25
   (c) 30 (d) 20
   (e) None of these
6. One man adds 6 litres of water to 11 litres of milk and another 9 litres of water to 8 litres of milk. What is the ratio of the strengths of milk in the two mixtures?
   (a) 2 : 3 (b) 3 : 2
   (c) 11 : 8 (d) 8 : 11
   (e) None of these
7. Two vessels contain equal quantity of mixtures of milk and water in the ratio 8:9,arid 12:5 respectively. Both the mixtures are now mixed thoroughly. Find the ratio of milk to water in the new mixture so obtained.
   (a) 7 : 10 (b) 13 : 21
   (c) 21 : 13 (d) 10 : 7
   (e) None of these
8. Two vessels contain equal quantity of mixtures of milk and water in the ratio 9 : 5 and 4 : 3 respectively. Both the mixtures are now mixed thoroughly. Find the ratio of milk to water in the new mixture so obtained.
   (a) 17 : 11 (b) 11 : 17
   (c) 8 : 13 (d) 13 : 8
   (e) None of these
9. The contents of two vessels containing water and milk are in the ratio 2:3 and 4:5 are mixed in the ratio 1:2. The resulting mixture will have water and milk in the ratio
   (a) 77:58 (b) 58:77
   (c) 68:77 (d) 77:68
   (e) None of these
10. The contents of two vessels containing water and milk are in the ratio 3:4 and 5:4 are mixed in the ratio 1:4 The resulting mixture will have water and milk in the ratio : .
    (a) 184:176 (b) 167:184
    (c) 167:148 (d) 148:167
    (e) None of these
11. An amount of ` 950 is distributed among A, B and C in the ratio of 5 : 11 : 3, what is the difference between the share of B and A?
    (a) 550 (b) 250
    (c) 200 (d) 300
    (e) None of these
12. A and B are two alloys of gold and copper prepared by mixing metals in proportions 7 : 2 and 7:11 respectively. If equal quantities of alloys are melted to form a third alloy C, the proportion of gold and copper in C will be:
    (a) 5 : 9 (b) 5 : 7
    (c) 7 : 5 (d) 9 : 5

(e) None of these

13. The sum of three numbers is 105. If the ratio between the first and second be 2 : 3 and that between the second and third be 4 : 5, then find the second number.
(a) 35 (b) 24
(c) 36 (d) 45
(e) None of these

14. The sum of three numbers is 275. If the ratio between the first and second be 3 : 7 and that between the second and third be 2 : 5, then find the second number.
(a) 30 (b) 175
(c) 70 (d) 80
(e) None of these

15. If A : B = 3 : 4, B : C = 5 : 7 and C : D = 3 : 5, then find A : B : C : D.
(a) 9 : 21 : 12 : 28 (b) 45 : 60 : 84 : 140
(c) 9 : 12 : 28 : 21 (d) 9 : 12 : 21 : 82
(e) None of these

16. A hound pursues a hare and takes 6 leaps for evejy 7 leaps of the hare, but 5 leaps of the hound are equal to 6 leaps of the hare. Compare the rates of the hound and the hare.
(a) 36 : 35 (b) 35 : 34
(c) 34 : 33 (d) 33 : 32
(e) None of these

17. A hound pursues a hare and takes 3 leaps for every 4 leaps of the hare, but 2 leaps of the hound are equal to 3 leaps of the hare. Compare the rates of the hound and the hare.
(a) 9 : 8 (b) 7 : 6
(c) 5 : 6 (d) 8 : 9
(e) None of these

18. In 28 litres mixture of milk and water the ratio of milk and water is 5 : 2 How much water should be added in the mixture so that the ratio of milk to water becomes 2 : 5?
(a) 42 litres (b) 32 litres
(c) 24 litres (d) 39 litres
(e) None of these

19. In a mixture of 60 litres, the ratio of milk and water is 2 : 1. If the ratio of milk and water is to be 1 : 2, then the amount of water to be further added is :
(a) 42 litres (b) 56 litres
(c) 60 litres (d) 77 litres
(e) None of these

20. A mixture contains milk and water in the ratio of 9 : 4 On adding 4 litres of water, the ratio of milk to water becomes 3 : 2 Find the total quantity of the original mixture.
(a) 26 litres (b) 18 litres
(c) 10 litres (d) 30 litres
(e) None of these

21. A mixture contains milk and water in the ratio of 4 : 3 On adding 2 litres of water, the ratio of milk to water becomes 8 : 7 Find the total quantity of the final mixture.
(a) 16 litres (b) 12 litres
(c) 28 litres (d) 30 litres
(e) None of these

22. The ratio between two numbers is 15 : 7 If each number be decreased by 2, the ratio becomes 7 : 3 Find the numbers.
(a) 15, 7 (b) 30, 14
(c) 45, 21 (d) 60, 28
(e) None of these

23. The incomes of A and B are in the ratio 9 : 4 and their expenditures are in the ratio 7 : 3. If each saves ` 2000, what are their incomes?
(a) ` 90000, ` 4000
(b) ` 27000, ` 12000
(c) ` 72000, ` 16000
(d) ` 72000, ` 32000
(e) None of these

24. A mixture contains milk and water in the ratio of 9 : 4 On adding 8 litres of water, the ratio of milk to water becomes 3 : 2. Find the total quantity of the original mixture.
(a) 52 litres (b) 26 litres
(c) 104 litres (d) 30 litres
(e) None of these

25. A mixture contains milk and water in the ratio of 4 : 3 On adding 6 litres of water, the ratio of milk to water becomes 8 : 7 Find the total quantity of the final mixture.
(a) 168 litres (b) 12 litres
(c) 42 litres (d) 84 litres
(e) None of these

26. Find the number which, when added to the terms of the ratio 13 : 28 makes it equal to the ratio 1 : 2 (a) 4 (b) 3
(c) 2 (d) 1
(e) None of these

27. Find the number which, when added to the terms of the ratio 9 : 17 makes it equal to the ratio 3 : 5 (a) 4 (b) 3
(c) 2 (d) 1
(e) None of these

28. Find the number which, when subtracted from the terms of the ratio 15 : 17 makes it equal to the ratio 6 : 7
(a) 4 (b) 3
(c) 2 (d) 1
(e) None of these

29. Find the number which, when subtracted from the terms of the ratio 11 : 25 makes it equal to the ratio 4 : 11
(a) 4 (b) 3
(c) 1 (d) 1
(e) None of these

30. A bucket contains a mixture of two liquids A and B in the proportion 5 : 3 If 16 litres of the mixture is replaced by 16 litres of liquid B, then the ratio of the two liquids becomes 3 : 5. How much of the liquid B was there in the bucket?
(a) 25 litres (b) 15 litres
(c) 18 litres (d) 24 litres
(e) None of these

31. A bucket contains a mixture of two liquids A and B in the proportion 6 : 5 If 33 litres of the mixture is replaced by 33 litres of liquid B, then the ratio of the two liquids becomes 3 : 4 How much of the liquid A was there in the bucket?
(a) 84 litres (b) 48 litres
(c) 70 litres (d) 64 litres
(e) None of these

32. A vessel contains liquids A and B in ratio 3 : 1 If 8 litres of the mixture are removed and the same quantity of liquid B is added, the ratio becomes 1 : 3 What quantity does the vessel hold?
(a) 12 litres (b) 14 litres
(c) 16 litres (d) 10 litres
(e) None of these

33. A vessel contains liquids A and B in ratio 7 : 6 If 26 litres of the mixture are removed and the same quantity of liquid B is added, the ratio becomes 6 : 7 What quantity does the vessel hold?
(a) 142 litres (b) 172 litres
(c) 156 litres (d) 182 litres
(e) None of these

34. An employer reduces the number of his employees in the ratio 9 : 4 and increases their wages in the ratio 2 : 5 State whether his bill of total wages increases or decreases, and in what ratio?
(a) Decrease, 10 : 9
(b) Increase, 10 : 9
(c) Decrease 9 : 11
(d) Increase, 9 : 10
(e) None of these

35. Two candles of the same height are lighted at the same time. The first is consumed in 8 hours and the second in 6 hours. Assuming that each candle burns at a constant rate, in how many hours after being lighted, the ratio between the first and second candles becomes 2 : 1
(a) 2 hours 24 minutes
(2) 4 hours
(c) 1 hour 12 minutes
(d) 4 hours 48 minutes
(e) None of these

36. Two candles of the same height are lighted at the same time. The first is consumed in 7 hours and the second in 6 hours. Assuming that each candle burns at a constant rate, in how many hours after being lighted, the ratio between the first and second candles becomes 3 : 1
(a) 5 hours 36 minutes
(b) 5 hours
(c) 5 hours 60 minutes
(d) 6 hours
(e) None of these

37. Two candles of the same height are lighted at the same time. The first is consumed in 3 hours and the second in 1 hour. Assuming that each candle burns at a constant rate, in how many

hours after being lighted, the ratio between the first and second candles become 2 : 1

(a) 48 minutes (b) 1 hour 36 min

(c) 36 minutes (d) 60 minutes

(e) None of these

38. Divide 1162 into three parts such that 4 times the first is equal to 5 times the second and 7 times the third. Find the value of smallest part.

(a) 490 (b) 492

(c) 390 (d) 280

(e) None of these

39. Divide ` 680 among A, B and C such that A gets $\frac{2}{3}$ of what B gets and B gets $\frac{1}{4}$ th of what C gets. What is C's share?

(a) ` 280 (b) ` 380

(c) ` 480 (d) ` 120

(e) None of these

40. When 50% of one number is added to a second number, the second number increases to its four-thirds. What is the ratio between the first number and the second number?

(a) 3 : 2 (b) 3 : 4

(c) 2 : 3 (d) Data inadequate

(e) None of these

41. ` 600 has been divided among A, B and C in such a way that ` 40 more than (2/5) of A's share, ` 20 more than (2/7) of B's share, ` 10 more than (9/17) of C's share, are all equal. A's share is :

(a) ` 280 (b) ` 170

(c) ` 150 (d) ` 200

(e) None of these

42. Gold is 19 times as heavy as water and copper 9 times as heavy as water. The ratio in which these two metals be mixed so that the mixture is 15 times as heavy as water, is :

(a) 1 : 2 (b) 2 : 3

(c) 3 : 2 (d) 19 : 135

(e) None of these

43. One year ago the ratio between Laxman's and Gopal's salary was 3 : 4. The individual ratios between their last year's and this year's salaries are 4 : 5 and 2 : 3 respectively. At present the total of their salary is ` 4160. The salary of Laxman now, is

(a) ` 1600 (b) ` 2560

(c) ` 1040 (d) ` 3120

(e) None of these

ANSWERS

1.	(a)	9.	(b)	17.	(a)	25.	(e)	33.	(d)	41.	(c)
2.	(d)	10.	(c)	18.	(a)	26.	(c)	34.	(d)	42.	(c)
3.	(a)	11.	(d)	19.	(c)	27.	(b)	35.	(d)	43.	(a)
4.	(a)	12.	(c)	20.	(a)	28.	(b)	36.	(a)		
5.	(a)	13	(c)	21.	(d)	29.	(b)	37.	(c)		
6.	(c)	14.	(c)	22.	(b)	30.	(b)	38.	(d)		
7.	(d)	15.	(b)	23.	(d)	31.	(a)	39.	(c)		
8.	(a)	16.	(a)	24.	(d)	32.	(a)	40.	(c)		