Arithmetic - 04

Career Launcher

QA

CEX-Q-0208/25

Topics Covered

- Ratio and Proportion; Partnership

Number of Questions : 25

1. If $\dfrac{a}{b} = \dfrac{1}{3}$, $\dfrac{b}{c} = 2$, $\dfrac{c}{d} = \dfrac{1}{2}$, $\dfrac{d}{e} = 3$ and

   $\dfrac{e}{f} = \dfrac{1}{4}$, then what is the value of $\dfrac{abc}{def}$?

   (1) $\dfrac{3}{8}$ (2) $\dfrac{27}{8}$

   (3) $\dfrac{3}{4}$ (4) $\dfrac{27}{4}$

2. If $a - b : b - c : c - d = 1 : 2 : 3$, then what is the ratio of $(a + d) : c$?
   (1) 1 : 2 (2) 2 : 1
   (3) 3 : 1 (4) None of these

3. If $\dfrac{a}{2} = \dfrac{b}{3} = \dfrac{c}{4} = \dfrac{2a - 3b + 5c}{k}$, where a, b and c are not equal to zero , then 'k' is
   (1) 15
   (2) 17
   (3) 13
   (4) Cannot be determined

4. The ratio of the first class fare and second class fare is 3 : 1 and that of the number of passengers traveling by the first class and by the second class is 1 : 27. If Rs. 2,700 is collected as fare, then the amount collected from the first class passengers is
   (1) Rs. 300 (2) Rs. 729
   (3) Rs. 270 (4) Rs. 96.42

5. A bag contains Rs. 600 in the form of one rupee, 50 paise and 25 paise coins in the ratio of 3 : 4 : 12. Find the total value (in Rs.) of the 25 paise coins present in the bag.

6. The sum of four numbers is 253. The ratio of the first number to the second one is 2 : 3. The ratio of the second number to the third one is 5 : 6. The ratio of the third number to the fourth one is 8 : 9. What is the average of the second and the third number?

7. In an organization, ratio of the number of males to that of the females is 4 : 3. If the number of males is increased by 10% and that of females by 20%. What is the new ratio of the number of males to that of females?
   (1) 11 : 9 (2) 10 : 9
   (3) 11 : 8 (4) 3 : 2

8. If a, b, c are three positive integers such that a and b are in the ratio 3 : 4 while b and c are in the ratio 2:1, then which one of the following is a possible value of (a + b + c)?
   (1) 201 (2) 205
   (3) 207 (4) 210

9. The ratio of the present ages of Chinta and Mani is 14 : 19. The average age of Suknaya, Chinta and Mani is 43 years. If the ratio of present age of Suknaya to that of Chinta is 5 : 7, find the present age (in years) of Mani.
   (1) 28 (2) 42
   (3) 57 (4) 56

10. Monthly incomes of X and Y are in the ratio 1 : 3 and their expenses are in the ratio 19 : 40. X saves Rs. 18,860 less than that Y and in total they save Rs. 36,020. Income of X and Y respectively are:
(1) Rs. 10,480 and Rs. 31440
(2) Rs. 9,000 and Rs. 27,000
(3) Rs. 14,200 and Rs. 42,600
(4) Rs. 18,000 and Rs. 31,440

11. One year ago, the ratio of Harsha's and Mandar's salaries was 3 : 5. The ratios of their individual salaries of last year and present year are 2 : 3 and 4 : 5 respectively. If their combined salary for the present year is Rs.86,000, find the present salary of Harsha.
(1) Rs.38,000   (2) Rs.24,000
(3) Rs.39,000   (4) Rs.36,000

12. The ratio of the present age of a mother to that of her daughter is 9 : 4. Ten years ago, the ratio of their ages was 7 : 2. What are their present ages?
(1) 54 years, 24 years
(2) 45 years, 20 years
(3) 54 years, 28 years
(4) 36 years, 16 years

13. Suppose, C1, C2, C3, C4, and C5 are five companies. The profits made by C1, C2, and C3 are in the ratio 9 : 10 : 8 while the profits made by C2, C4, and C5 are in the ratio 18 : 19 : 20. If C5 has made a profit of Rs 19 crore more than C1, then the total profit (in Rs) made by all five companies is
(1) 438 crore   (2) 435 crore
(3) 348 crore   (4) 345 crore

14. Arun's present age in years is 40% of Barun's. In another few years, Arun's age will be half of Barun's. By what percentage will Barun's age increase during this period?

15. The numbers of students in Batch A and Batch B were in the ratio 2 : 3 in January and 5 : 8 in February. The numbers of students in Batch A and Batch B increased from February to March at rates that were twice and thrice, respectively, of rates at which they increased from January to February. If the ratio of the total number of students in these two batches in February and January was 26 : 5, then find the ratio of number of students in Batch A and Batch B in March?
(1) 25 : 64   (2) 25 : 84
(3) 45 : 112   (4) 35 : 92

16. A stall sells popcorn and chips in packets of three sizes: large, super, and jumbo. The numbers of large, super, and jumbo packets in its stock are in the ratio 7 : 17 : 16 for popcorn and 6 : 15 : 14 for chips. If the total number of popcorn packets in its stock is the same as that of chips packets, then the numbers of jumbo popcorn packets and jumbo chips packets are in the ratio
(1) 1 : 1   (2) 8 : 7
(3) 4 : 3   (4) 6 : 5

17. Three friends A, B and C went on a picnic. A brought 5 apples and B brought 3 apples, and C had Rs. 80. They divided the apples equally among themselves and C gave all his money to A and B for their contributions. What are the respective shares of A and B from that money?
(1) 50, 30   (2) 70, 10
(3) 40, 40   (4) 33.33, 66.66

18. The height of Santosh is directly proportional to the square root of his age. What will be the height of Santosh at 16 years, if he is 4 ft tall at the age of 9 years?
(1) 5 ft 4 inches   (2) 5 ft 2 inches
(3) 5 ft   (4) 5 ft 3 inches

19. The value of a diamond is directly proportional to the square of its weight. If a diamond weighing 4 kg breaks into 2 pieces, its total value decreases by 37.5%. Weights of the two pieces are:
(1) 2 kg, 2 kg   (2) 2.5 kg, 1.5 kg
(3) 3 kg, 1 kg   (4) None of these

20. Total expenses of a boarding house are partly fixed and partly varying linearly with the number of boarders. The average expense per boarder is Rs. 700 when there are 25 boarders and Rs. 600 when there are 50 boarders. What is the average expense per boarder when there are 100 boarders?
(1) 550   (2) 580
(3) 540   (4) 570

21. A, B and C invested their money in the ratio 3 : 6 : 7. If the total amount invested by them was Rs. 80,000 and the profit earned was 40% of the amount invested. Then what was the sum of the shares of B and C in the profit?
(1) Rs.18,000   (2) Rs.26,000
(3) Rs.26,500   (4) Rs.24,000

22. Three people A, B and C entered into partnership and the ratio of their investments was $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$. The ratio of the time period for which they invested their money was $1 : \frac{1}{2} : \frac{1}{4}$. The profits were shared in the direct proportion to amount invested and time. If A's share is Rs. 30,000, then find B's share.
(1) Rs. 10,000   (2) Rs. 20,000
(3) Rs. 15,000   (4) Rs. 25,000

23. A began a business with Rs. 4,500 and was joined after wards by B with Rs. 5,400. If the profits at the end of the year were divided in the ratio 2 : 1, then B joined the business after:
(1) 5 months   (2) 4 months
(3) 6 months   (4) 7 months

24. Ajay started a firm with a capital of Rs. 28,000. After 5 months, Boman joined him and invested Rs. 40,000 in the firm. Chirag was also added as a new partner with an individual investment of Rs. 56,000 after 7 months of commencement. If at the end of the year, the profit of the firm is Rs. 32,000, what is the share of Boman?
(1) Rs. 12,000   (2) Rs. 8,000
(3) Rs. 14,000   (4) Rs. 10,000

25. Abhishek and Rani started a partnership business by investing Rs.1 cr and Rs.2 cr respectively in the beginning of the year. Each of them withdrew one-fourth of their investment after each quarter till 2nd quarter. At this point Susmita and Randeep joined them with Rs.50 lakh and Rs.1 cr respectively. Randeep withdrew his entire investment after 3 months. If the profit at the end of the year is Rs. 41 lakhs, the combined share of Abhishek and Rani is
(1) Rs.22 lakh   (2) Rs.33 lakh
(3) Rs.8 lakh   (4) Rs.30 lakh

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