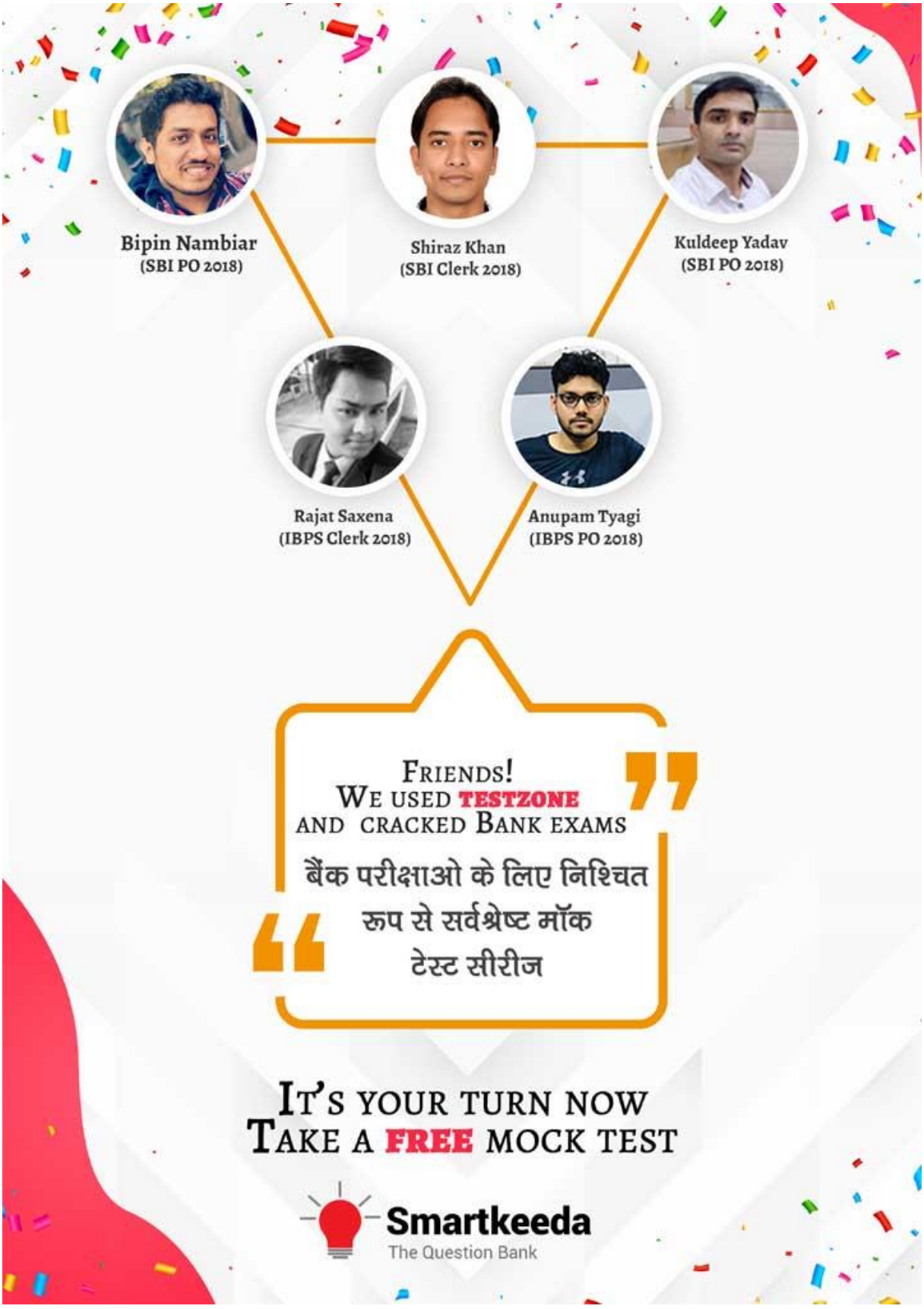
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The Question Bank

Ratio and Proportion Questions for SBI Clerk Mains, IBPS Clerk Mains, RBI Assistant Mains, LIC AAO, SBI PO Pre, IBPS PO Pre and RRB Scale I Pre Exams.

Ratio n Proportion Quiz 5

Directions: Read the following questions carefully and choose the right answer.

1. In the income statement of Asha and Ravenna, the ratio of their income in the year 2017 was 5 : 4. The ratio of Asha's income in the year 2018 to that in 2017 is 3 : 5 and the ratio of Ravenna's income in the year 2018 to that in 2017 is 3 : 2. If Rs. 10242 is the sum of the income of Asha and Ravenna in the year 2018, then find the income of Ravenna in the year 2017?

A. Rs. 1024 B. Rs. 1138 C. Rs. 2776 D. Rs. 2420 E. Rs. 4552

2. Two vessels A and B of equal volume contain milk and water in the ratio 3 : 2 and 2 : 1 to their brim respectively. Two litres of the solution from vessel A and three litres of the solution from vessel B are poured into a big empty vessel C. If the solution in C occupied 40% of the capacity of C, what proportion of the volume of vessel C should be the volume of water that shall be added so that the ratio of milk and water in vessel C becomes 1 : 1?

A. $\frac{21}{125}$ B. $\frac{2}{25}$ C. $\frac{4}{75}$ D. $\frac{14}{125}$ E. None of these

3. The average score in an examination taken by 52 students of a class is 85. If the scores of the best 5 performers are not considered, the average score of the remaining students falls by 2. If, none of the first five highest scorers is not below 80 and if each of the 5 top scorers had distinct integral scores, find the maximum possible score of the topper.

A. 108 B. 109 C. 177 D. 193 E. 183

4. A bag contains certain number of coins of different denominations. The ratio of the number of Rs. 1 coins to Rs. 2 coins is 5 : 7, respectively and the ratio of number of Rs. 2 coins to Rs. 5 coins is 7 : 6 respectively. Find the total value of the Rs. 5 coins, if the total value of the Rs. 1 coins in the bag is Rs. 15.

A. Rs. 180 B. Rs. 90 C. Rs. 45 D. Rs. 115 E. None of these

5. **A father distributed some chocolates among his four children and kept some with him. The eldest three children got chocolates in the ratio 3 : 11 : 7. The total number of chocolates with father and youngest child is three times the total chocolates with the three eldest children. The ratio of chocolates with father and that with all the children is 3 : 4. Find the total number of chocolates if the youngest child has 81 chocolates with him?**

A. 273 B. 252 C. 278 D. 303 E. None of these

6. **Sumit hired a travelling car for a tour. If the car is rented for 8 hours or less the charge is Rs. 100 per hour or Rs. 8 per km whichever is more. On the other hand, if the car is rented for more than 8 hours, the charge is Rs. 80 per hour or Rs. 6 per km whichever is more. Sumit used the car for 120 km and paid Rs. 800. For how many hours did he took the car for rent?**

A. 12 hours B. 9 hours C. 10 hours D. 8 hours E. 11 hours

7. **In class X of a school there are two sections A and B with strength ratio 2 : 1. The ratio of boys and girls in section A is 3 : 1 and that in section B is 3 : 5. Students of both the sections are made to stand in the ground in rows of boys and girls, with each row having equal number of students. If the maximum number of students possible in a row is 96 what is the difference between the number of boys in section A and B?**

A. 218 B. 286 C. 372 D. 288 E. None of these

8. **The ratio of marks obtained by Shubham in theory to the total marks which can be obtained in theory is 7 : 10. Total marks which can be obtained in practicals were 20% of the total marks of theory. If Shubham got full marks in practical then find the ratio of total marks obtained by Shubham to the total marks which can be obtained in the subject (theory + practical)**

A. 4 : 5 B. 3 : 5 C. 5 : 6 D. 3 : 4 E. 2 : 3

9. **The ratio of salary of A and B is 5 : 7 and that of B and C is 3 : 5. The salary of A is Rs. 165000 and C spends 28.56% of his salary on rent. How much money is left with C after expenditure on rent?**

A. Rs. 296000 B. Rs. 268000 C. Rs. 282000 D. Rs. 275000 E. None of these

10. **Incomes of John and Kelvin are in the ratio 4 : 7 and their spending are in the ratio 6 : 11. If John saves one third of his income, then what will be the ratio of their savings.**

A. 12 : 13 B. 13 : 12 C. 18 : 19 D. 12 : 19 E. None of these

Correct Answers:

1	2	3	4	5	6	7	8	9	10
E	D	D	B	B	C	D	D	D	D

Explanations:

1. Let the income of Asha in 2018 and 2017 be 3x and 5x respectively.

Let the income of Ravenna in 2018 and 2017 be 3y and 2y respectively

Since, the ratio of their income in the year 2017 was 5 : 4

5x : 2y = 5 : 4

2x = y

The sum of their incomes in 2018 is Rs. 10242

3x + 3y = 10, 242

9x = 10, 242

x = 1,138 and y = 2276

Ravenna's income for the year 2017 = 2y = Rs. 4552

Hence, option E is correct.

2. Amount of milk poured into C from vessel A and B

$= 2 \times \frac{3}{5} + 3 \times \frac{2}{3} = \frac{16}{5}$ litres

Also, amount of water poured into C from vessels A and B

$= 5 - \frac{16}{5} = \frac{9}{5}$ litres

Given, 5 litres represent 40% of the capacity of vessel C, vessel C has a capacity of

$= 5 \times \frac{5}{2} = 12.5$ litres

To make the quantities of water and milk same in the vessel C, quantity of water to be added

$= \frac{16}{5} - \frac{9}{5} = \frac{7}{5}$ litres

Therefore, reqd. answer $= \frac{7/5}{12.5} = \frac{14}{125}$

Hence, option D is correct.

3. Let the score of the topper be T.

Total score of the 52 students = 52 × 85 = 4420

Total score of the remaining 47 students after scores of the best five performers are removed = 47 × 83 = 3901

Total score of the top five students = 4420 – 3901 = 519

T + (total score of the next 4 top scores) = 519

T is the maximum when the total score of the next 4 top scorers is minimum.

Total score of the next 4 top scorers has a minimum value of 80 + 81 + 82 + 83 = 326 (since all the top 5 scores are distinct) and the least is 80.

T has a maximum value of 519 – 326 = 193

Hence, option D is correct.

4. Ratio of the number of coins of denominations Rs. 1 : Rs. 2 : Rs. 5 = 5 : 7 : 6

Let, the number of coins of Rs. 1, Rs. 2 and Rs. 5 in the bag be 5x, 7x and 6x.

Since, the total value of Rs. 1 coin in the bag is Rs. 15

So, the number of coins of Rs. 1 in a bag = 15

5x = 15 , ⇒ x = 3

Therefore, number of Rs. 5 coins in the bag = 6x = 18

So, required value of Rs. 5 coins = 6 × 3 × 5 = Rs.90

Hence, option B is correct.

5. Let the children be P, Q, R and S and Father be F

Chocolates with P : Q : R= 3 : 7 : 11

Let the number of chocolates be 3k, 7k and 11k

Total chocolates with three eldest children = 21k

Chocolate with F and S = 3 × 21k = 63k

Total chocolates = (21k + 63k) = 84k

Chocolate with F : (P + Q + R + S) = 3 : 4

Total 7 units of chocolate = 84 k

1 unit = 12k

Chocolate with F = 3 × 12k = 36k
Chocolate with S = (63k – 36k) = 27k
27 k = 81 → k=3

Total number of chocolates = 84k = 84 × 3 = 252

Hence, option B is correct.

6. Let the car is rented for 8 hours or less.

Then the number of hours it is rented for
$\frac{800}{100}$ = 8 hours

But if it charged Rs. 8 per km, the amount that should paid be 120(8) = 960

But he paid only Rs. 800

The car is rented for more than 8 hours

Number of hours = $\frac{800}{80}$ = 10 hours

If it is charged at Rs. 6 per km, the amount that should paid be 120(6) = Rs. 720 which is less than s. 800
Sumit rented car for 10 hours.

Hence, option C is correct.

7. Let the strength of A = 16k and that of = 8k

Section A ratio of Boys: girls = 3 : 1 → boys = 12k and girls = 4k

Section B ratio of boys: girls = 3 : 5 → boys = 3k and girls = 5k

A + B – boys = 15k and girls = 9k

Maximum number of students in a row = HCF (15k, 9k) = 3k → 3k = 96 → k=32
Difference between boys of section A and B = 12k – 3k = 9k → 9 × 32 = 288

Hence, option D is correct.

8. Let, marks obtained by Shubham in theory and total marks of theory be '7x' and '10x' respectively

So, total marks (theory + practical) = 10x + 2x = 12x

Marks obtained by Shubham (theory + practical) = 7x + 2x = 9x

So, reqd. ratio = $\frac{9x}{12x} = \frac{3}{4}$

Hence, option D is correct.

9. Salary ratio of A : B = 5 : 7 and B : C = 3 : 5 so A : B : C = 15 : 21 : 35 and A : C = 3 : 7

Salary (A) = 165,000 so salary of (C)
$= \frac{7}{3} \times 165000 = \text{Rs. } 385000$

C spends 28.56% on rent => C spends 2/7 on rent so remaining will be 5/7 of salary

$\text{Remaining} = \frac{5}{7} \times 385000 = \text{Rs. } 275000$

Hence, option D is correct.

10. Let the income of

John 4x,

Kelvin 7x

And expenditure be:

John → 6y……..(i)

Kelvin → 11y

John spending = John's earning – John's savings

John's expenditure = $4x - \frac{4x}{3} = \frac{8}{3}x$ .....(ii)

(i) = (ii)

$6y = \frac{8}{3}x \Rightarrow \frac{x}{y} = \frac{9}{4}$

Reqd. Ratio = $\frac{4x - 6y}{7x - 11y} = \frac{4x - \left(\frac{4}{9}x\right)6}{7x - \left(\frac{4}{9}x\right)11} = \frac{36 - 24}{63 - 44} = \frac{12}{19}$

Hence, option D is correct.