Quantitative Aptitude

Partnership

Level-1

Q1 P, Q and R invested Rs. 7200, 8400 and 9600 respectively. If the ratio of their profit earned is 3 : 7 : 16. Find the ratio of the time for which they invested their capitals?
(A) 2 : 5 :7 (B) 1:2:4
(C) 1:5:2 (D) 1:4:4
(E) None of these

Q2 A and B invested in a company. They earned some profit which they divided in the ratio of 4 : 5. If A invested Rs. 60,000, the amount invested by B is :
(A) Rs.75000 (B) Rs.65000
(C) Rs.57000 (D) Rs.56000
(E) None of these

Q3 A, B and C started the business with the investment in the ratio of 4:3:5 and the investment period of A, B and C is 10 months, 12 months and 8 months respectively. What is the ratio of profit of A, B and C?
(A) 5:4:6 (B) 3:2:3
(C) 10:9:10 (D) 6:5:6
(E) None of these

Q4 **Directions: Study the following data carefully and answer the questions accordingly.**
X and Y invest in a company in the ratio 2: 3. If 10% of the total profit goes to charity and Y's share is Rs. 600, the total profit is:
(A) 1500 (B) 1000
(C) 500 (D) 2000
(E) none of these

Q5 There is a partnership of 3 people in a company. They shared the profit in this company in the ratio 3: 5: 6. They had partnered for 10 months, 6 months and 5 months respectively. What was the ratio of their investments?
(A) 9 : 25 : 36 (B) 10 : 25 : 6
(C) 36 : 25 : 9 (D) 25 : 36 : 9
(E) none of these

Q6 Abhishek and Astha invested in a Business in ratio 11:17 . Out of the total profit 7% goes for the charity Astha share is 1581 then Find total profit?
(A) 2800 (B) 2200
(C) 3400 (D) 1700
(E) 3400

Q7 P and Q started a business in which their capital is ₹4500 and ₹6000 respectively. R joins them after 2 months and total annual profit received from the business is ₹30600 out of which share of R is ₹11700, then find the capital of R.
(A) ₹8000 (B) ₹7500
(C) ₹7200 (D) ₹6500
(E) None of these

Directions (8) Read the following passage and answer the given questions.
Mohan started a business with an investment of Rs.1200. After some months, Shyam join the business with an investment of Rs.3600 and after two more months Ram joins the business with Rs.2800. If the annual profit share of Mohan and Shyam is equal, then

Q8 Find for how many months Ram invested his money?
(A) 2 month (B) 5 month
(C) 4 month (D) 1 month
(E) 8 month

Q9

A and B start a business and invest Rs 50,000 and Rs 70,000 respectively. B is an active partner and she gets 10% of the profit separately. If their business yields them a total of Rs 80,000 as profit, what is the share of B at the end of a year?

(A) 40,000 (B) 42,000
(C) 50,000 (D) 32,000
(E) 35,000

Q10 Ajay and Vijay started a business by investing in a ratio 5:9. Ajay insvested the amount for the whole year while Vijay invested the amount for half year. Find the ratio in which profit is divided between them?

(A) 10:19 (B) 1:9
(C) 10:9 (D) 9:10
(E) 7:9

Q11 Mohan and Nilesh entered into a partnership with capitals in the ratio 8 : 7. After 5 months, Mohan withdrew $\frac{1}{4}$ of its capital and Nilesh withdrew $\frac{1}{7}$ of its capital. The gain at the end of the year was Rs. 4770. Mohan's share in this profit is:

(A) 2960 (B) 2360
(C) 2460 (D) 2260
(E) None of these

Q12 Rahul invested an amount of Rs.29500 in order to start a business. Gina joined him 4 months later by investing an amount of Rs.33500. If the business earned a profit of Rs.137800 at the end of two years, find the difference between their share of profit.

(A) Rs.3800 (B) Rs.3600
(C) Rs.3400 (D) Rs.2800
(E) None of these

Q13 Harsh and Vikas entered into a partnership and invested Rs. 3000 and Rs. 5000 respectively. If they split one fifth of the profit equally for their efforts and the balance in the ratio of their investments, then Vikas got Rs. 600 more than Harsh. Find the profit gained by the them?

(A) 2000 (B) 3000
(C) 5000 (D) 1500
(E) None of these

Q14 Anil , Ashish and Deepak enter into a partnership in the ratio $\frac{7}{2} : \frac{4}{3} : \frac{6}{5}$. After 4 months Anil increases his share by 50%. If total profit at the end of 1 year is Rs.21600. Then find Deepak's share in the profit.

(A) Rs.3200 (B) Rs.3500
(C) Rs.3600 (D) Rs.4300
(E) None of these

Q15 A, B, and C started a business with their initial investment of ₹4000, ₹4500, and ₹5000 respectively. After 6 months, A and B added ₹1500 and ₹1000 more to his capital. If total annual profit from the business is ₹82600, then find the share of A.

(A) ₹28500 (B) ₹26600
(C) ₹22800 (D) ₹24700
(E) None of these

Q16 **Directions: Study the following question carefully and choose the right answer given beside.**

Three persons Alpesh, Mukesh and Rakesh invested different amounts in a fixed deposit scheme for one year at the rate of 12% per annum and earned a total interest of Rs 3240 at the end of the year. If the amount invested by Mukesh is Rs 5000 more than the amount invested by Alpesh and the invested by Rakesh is Rs 2000 more than the amount invested by Mukesh, what is the amount invested by Mukesh?

(A) Rs 8000 (B) Rs 16000
(C) Rs 12000 (D) Rs 10000
(E) Rs 20000

Q17 Amit and Sumit enter into a partnership for a year. Amit invests Rs. 3000, and Sumit invests Rs. 5000. After 6 months, they admit Nain, who invests Rs. 12000. If Sumit withdraws his contribution after 6 months, how would Amit's

share in a profit of Rs 4600 at the end of the year?

(A) 1000 (B) 1200
(C) 1600 (D) 2200
(E) None of these

Q18 Rahul and Mani started a business with capital of ₹7200 and ₹12000 respectively. Anu joined them after 5 months with a capital of ₹15000 and Mani withdrew ₹2000 from his capital. Find the ratio of profit share of Rahul, Mani, and Anu from the business at the end of 15 months.

(A) 24: 40: 50 (B) 54: 80: 75
(C) 48: 80: 75 (D) 27: 30: 25
(E) None of these

Q19 Amit and Bunty started a business with a capital of Rs 3200 & Rs 4400 respectively. After four months Amit increased his investment by 12.5% and Bunty has withdrawn his $9\frac{1}{11}\%$ from his investment. If at the end of the year, the difference of their profit shares is Rs. 1750, then find the profit share of Bunty (in Rs.)?

(A) 10850 (B) 10750
(C) 10250 (D) 10150
(E) 11250

Q20 A, B and C invested in the ratio of 5 : 7 : 9. After 6 months, B invested the same amount as before but A and C withdrew $\frac{5}{7}$th and $\frac{7}{9}$th of the initial investment respectively. Find the share of C, if the total profit at the end of the year is Rs. 268731?

(A) 76923 (B) 77923
(C) 78923 (D) 79923
(E) 66923

Level-2

Q1 Pawan started a business with initial capital of ₹42000. Jay joined his after 3 years with initial investment of ₹72000. If profit at the end of business is ₹76700 and difference between shares of Pawan and Jay is ₹14300 (Share of Pawan is more than that of Jay), then find the total tenure of the business.

(A) 5 years (B) 6 years
(C) 7 years (D) 4 years
(E) None of these

Q2 Suman being a working partner gets x% of the profit as salary, the remaining is shared between Suman, Sneha and Smantha in the ratio 3 : 7 : 11, If Suman gets Rs. 4000 out of total profit of Rs 14,000. then find the salary (in Rs.) of Suman?

(A) 2000 (B) 2300
(C) 2333.33 (D) 2330
(E) 2390

Q3 'A' and 'B' started a business together by investing in ratio x:(x + 3). Six months later, 'A' doubled his investment. If at the end of the year, the profit earned by 'A' is Rs. 3,600 out of total profit of Rs. 7,800, then find the value of 'x'.

(A) 6 (B) 3
(C) 9 (D) 4
(E) 10

Q4 'A', 'B' and 'C' started business by investing Rs. 3,600, Rs. 4,950 and Rs. 6,750, respectively. 1 year later, 'A', 'B' and 'C' increased their respective investments by 25%, Rs. 900 and 20%. 2 years after starting the business, if the profit share of 'B' is Rs. 2,000 more than that of 'A', then find the profit share of 'C'.

(A) Rs. 11,000 (B) Rs. 13,000
(C) Rs. 9,500 (D) Rs. 8,000
(E) Rs. 10,000

Q5 Amit and Ragav enter a partnership by investing Rs.6000 and Rs.10000 respectively. After 'x' months, Amit added Rs.1000 to his investment. After next 'x' months, Ragav withdrew Rs.1000. At the end of year partnership, profit earned by Amit and Ragav is in the ratio 5: 7 respectively. What is the value of 'x'?

(A) 5 (B) 6
(C) 8 (D) 4
(E) 9

Q6 Sum of the amount invested by Kunal and Gourav is Rs.10000. Kunal invested 10% more than Akshay who invested Rs.5000 and joined Kunal and Gourav after 7 months. After 9 months from the beginning of partnership, Gourav left. If the total profit earned by Kunal ,Gourav and Akshay is Rs.7890, what is the share of Akshay at the end of 1 year?

(A) 1200 (B) 1300
(C) 1400 (D) 1000
(E) 1500

Q7 Persons P and Q started the business and after 3 months P added ₹2000 more to his capital while Q withdraws ₹2000 from his capital. If the ratio of their initial investment is 5: 7 and the ratio of their profit share at the end of 8 months is 15: 17, find the ratio of their profit share at the end of a year.
Assume investment remains unchanged after 3 months.

(A) 15: 17 (B) 19: 21
(C) 23: 25 (D) 25: 27
(E) 19:23

Q8 P and Q enter into a partnership and invested Rs. 42000 and Rs. 54000 respectively. If they split half of the profit equally for their efforts and the remaining balance in the ratio of their

investments, then Q got Rs. 510 more than P. What was the profit made in the partnership ?

(A) Rs 6480 (B) Rs 7280
(C) Rs 8160 (D) Rs 5496
(E) None of these

Q9 A and B enter into a partnership with their capital of ₹7000 and ₹8400 respectively. They invested for 15 months and 10 months respectively and out of total profit from the business, 28% is divided between them equal and remaining according to their investment. Find the final ratio of profit shares of A to B.

(A) 23: 25 (B) 14: 11
(C) 26: 21 (D) 7: 3
(E) 27:23

Q10 A and B start a coffee shop with an investment of Rs 15000 and Rs 8000 respectively. If A is a working partner and takes 25% of the total profit as his salary and remaining profit is divided according to their investment. In this process A receives Rs 44000 more than B as a profit. calculate the overall profit?

(A) 89000 (B) 90000
(C) 91000 (D) 92000
(E) None of these

Q11 Arun, Varun and Tarun started a business by investing amounts in the ratio of 8 : 6 : 15. After one year, they earned a total profit of Rs 12000; out of which Arun's profit share was Rs 4000 which was Rs 1000 more than Varun's profit share. Find the respective ratio of the time for which they had invested the amounts?

(A) 3 : 5 : 2 (B) 3 : 7 : 2
(C) 3 : 3 : 2 (D) 3 : 2 : 2
(E) None of these

Q12 Arvind, Balkrishna and Chandrabhan started a business by investing amounts in the ratio of 5: 3: 4. After 8 months, Arvind invested the same amount as he invested before and Balkrishna withdrew 1/6 amount while Chandrabhan withdrew half of his investment. If at the end of a year, Chandrbhan earned a profit of Rs 3300, then find the difference between the profits earned by Arvind and Balkrishna.

(A) 3895 (B) 3095
(C) 3795 (D) 3295
(E) None of these

Q13 Mayank started a business which was joined by Sudeep after 3 months such that the capital of Sudeep is ₹5000 more than that of Mayank. If Mayank adds ₹10000 more to his capital after 3 months from the start of the business and his share from annual profit is ₹11340 out of total profit of ₹19440, find the sum of initial capital of both the persons together.

(A) ₹75000 (B) ₹115000
(C) ₹105000 (D) ₹85000
(E) ₹95000

Q14 250000 was invested by A and B together to start a small business. A invested Rs X and B invested Rs Y. They got profit of Rs.25800 at the end of the year, and B took his profit Share of Rs.12600. Find the value of X, if B withdrew his sum after 9 months?

(A) 110000 (B) 120000
(C) 150000 (D) 20000
(E) 250000

Q15 Astha, Bijli, and Champa started a business. They invested amounts in the ratio of 1: 2: 3 for 3 months respectively. After this they invested in the ratio of 2: 3: 2 respectively. Investment of Astha for 6 months is 1600 less than that of Champa. After 6 months Astha, Bijli, and Champa invest 2000, 3000, and 4000 respectively for 3 months.

If B invested 1500 for the second 3 months, then the total profit ratio of A, B & C is

(A) 74 : 61 : 38 (B) 38 : 60 : 73
(C) 38 : 61 : 74 (D) 74 : 60 : 38
(E) None of these

Q16 Directions: Study the following question carefully and choose the right answer given

beside.

Sonal and Tilak entered into a partnership for a year in which Sonal invested Rs 120000 and Tilak invested Rs 70000. After 4 months, Sonal invested Rs 80000 more whereas after 5 months, Tilak invested Rs 30000 more. When two months were left Swapan also joined investing Rs 400000 as her contribution. If the profit for the year was 12.5% of 1572000, find the share of Sonal, Tilak and Swapan.

(A) Rs 104000, Rs 52500, Rs 40000
(B) Rs 52500, Rs 104000, Rs 40000
(C) Rs 78420, Rs 48645, Rs 48770
(D) Rs 40000, Rs 104000, Rs 52500
(E) None of these

Q17 Astha, Bijli, and Champa started a business. They invested amounts in the ratio of 1: 2: 3 for 3 months respectively. After this they invested in the ratio of 2: 3: 2 respectively. Investment of Astha for 6 months is 1600 less than that of Champa. After 6 months Astha, Bijli, and Champa invest 2000, 3000, and 4000 respectively for 3 months.

Find the total investment of Astha if the profit ratio of Bijli to the total profit is 29: 83.

(A) 32600 (B) 32800
(C) 10800 (D) 32000
(E) None of these

Q18 A started a business with some amount, after 6 months B joined the business and next after some months, C joined them. A invested 1.5 times more money than B and C invested two times more money than B. The profit of Rs 66000 was found after 2 years. A take 10% extra for managing the business. If A received a total amount in the profit Rs 39000, then for how many months did C invest their money?

(A) 4 months (B) 6 months
(C) 9 months (D) 12 months
(E) None of these

Q19 Astha, Bijli, Champa started a business. They invested amounts in the ratio of 1: 2: 3 for 3 months respectively. After this they invested in the ratio of 2: 3: 2 respectively. Investment of Astha for 6 months is 1600 less than that of Champa. After 6 months Astha, Bijli, Champa invested 2000, 3000 and 4000 respectively for 3 months.

If the total investment by Astha is 12600, then find the total investment by Bijli and Champa?

(A) 46500 (B) 45500
(C) 43500 (D) 44500
(E) None of these

Q20 **Directions: Study the following question carefully and choose the right answer given beside.**

Ramesh starts a business with Rs. 3900. After 3 months, Shankar joins as a partner with a capital of Rs. 5200 again after some months Mohit joins as a partner with a capital of Rs. 6500. The total profit of one year is Rs.2900 but Mohit already has withdrawn Rs. 100 per month from his profit so the remaining profit was divided in the ratio of 6: 6: 1 respectively. Find for how many months does Mohit join?

(A) 5 months (B) 4 months
(C) 2 months (D) 3 months
(E) None of these

Level-3

Q1 'A', 'B' and 'C' started a business where 'B' invested Rs. 2,000 more than 'A' while 'C' invested Rs. 500 less than 75% of the amount invested by 'B'. 'C' invested for 4 months more than the time for which 'A' invested his capital while the time period for which 'B' invested was 10% less than the time for which 'A' invested. The profit share of 'B' was 65% more than that of 'A'.
Which among the following can be determined based on the above information?
I. The time period for which 'A' invested
II. Ratio of profit shares of 'B' and 'C' respectively
III. Average investment of 'A' and 'B' together.
(A) Only III
(B) Only I and III
(C) Only II and III
(D) Only I and II
(E) Only I

Q2 A and B started a business with initial investments of Rs. 2,400 and Rs. 2,500 respectively. After one year A withdrew ___% and B withdrew ____% of their initial investments. After two years profit share of A out of the total profit is more than 50%.
The values given in which of the following options will fill the blanks in the same order in which is it given to make the above statement true:
I. 20%, 30%
II. 25%, 30%
III. 12%, 16%
(A) Only I and III
(B) Only I
(C) Only I and II
(D) Only II
(E) None of these

Q3 Ansu and Arya started a partnership business with total investment of Rs. 18000 and ratio of their investments was _____ respectively. After 8 months Arya left and Ansu increased his investment by 50%. If the total profit after a year is Rs._____, then Arya got Rs. 5000.
The values given in which of the following options will fill the blanks in the same order in which is it given to make the statement true:
I. 4:5, 12000
II. 1:2, 9375
III. 5:4, 9000
(A) Only I
(B) Only I and II
(C) Only I and III
(D) Only II and III
(E) None of these

Q4 M, N and O entered into a partnership. N invested Rs.1800 more than M and O invested Rs.900 more than M. After 'T' months, N withdrew his whole investment. At the end of the year, M invested his profit share in a scheme at 15% simple rate of interest for 2 years and O invested his profit share in another scheme at 5% simple rate of interest for 3 years. Interest received by M and O is Rs.5760 and Rs.4500 respectively?
Find that which of following can be determined?
A: Ratio of M's investment to N's investment.
B: Total profit received by them together.
C: Value of 'T'.
(A) Only A
(B) Only A and C
(C) Only B
(D) Only B and C
(E) Only C

Q5 Akash and Sunil entered into a business with initial investments of Rs. 'A + 32' and Rs. 'A' respectively. After 'B' months Viru joined them with an initial investment which was 20% more than that invested by Akash initially. At the end of '2B' months ratio of profit share of Akash, Sunil and Viru was 6B:14C:9D respectively. Which of the following relation(s) is/are true?

I. D = 0.4B
II. A = 448C/[15D – 14C]
III. A = 224C/[3B – 7C]
(A) only I (B) only I and II
(C) only II (D) only I and III
(E) All True

Q6 A', 'B' and 'C' started a business by investing Rs. 800, Rs. 1,200 and Rs. 1,500, respectively. 6 months later, 'A' increased his investment by 'y%' while 'B' and 'C' decreased their investment by 25% and 40% such that at the end of first year, ratio of profit shares of 'A', 'B' and 'C' was 6:7:8, respectively. If the total profit earned from the business at the end of 2 years was Rs. 11,900, then find the profit share of 'B' out of it.
(A) Rs. 3,200 (B) Rs. 3,000
(C) Rs. 3,500 (D) Rs. 3,900
(E) Rs.4000

Q7 P and Q started a business with an initial investment of Rs. 2Z and Z respectively. After (Y – 4) months they added the same amount to their initial investment what they initially invested. After another 4 months Q left the business and R joined with an initial investment which is 400% more than that of Q. After another 8 months Q joined the business with Rs. Z and R double his money. At the end of two years, the profit share of each is Rs. P and C is Rs. M. Find the value of (Y + 8).
(A) 12 (B) 16
(C) 14 (D) 20
(E) None of these

Q8 Alok started a business with initial investment of Rs.30000, after 'P' years from the start of the business Vipin joins the business with Alok with initial investment of Rs.40000. After 'Q' years from the start of the business Shawant also joins the business with Alok and Vipin with initial investment of Rs.60000. If at the end of 30 years, total profit amount received by Vipin and Alok is Rs.3520 and Rs.3300 respectively out of total profit Rs.10780, then find the value of 'P' and 'Q'.
(A) P=12 and Q=6 (B) P=6 and Q=12
(C) P=8 and Q=16 (D) P=9 and Q=12
(E) None of these

Q9 P, Q & R started a business by investing of Rs. (X+800), Rs.(X-600) & Rs. X for ' 5Y' months, ' 4Y' months and ' 4Y+1' months respectively. Q received profit of Rs.325 out of total profit of Rs.1400. The present age of B is same as time period for which P has invested and present age of A is 60% more than that of B. If present age of C is 32.5% of present age of A, then age of A four years ago is equal to twice the present age of C.
If Z =\(\frac{X}{4\ Y}\), then find the value of Z.
(A) 200 (B) 300
(C) 400 (D) 500
(E) 600

Q10 A person invested Rs.8500 in a public sector bank (SI) at the rate of 4x% per annum for "n" years and then half of this amount (Principle + Interest) added with Rs.150 is invested in a private bank (SI) which offers "x%" per annum for "n" years then the interest earned from public sector bank is Rs.2790 more than the private bank. Find the value of (x × n)?
Note:
The unit digit of the wrong number is the value of "n"
27 42 77 140 239 372 577
(A) 20 (B) 30
(C) 40 (D) None of these
(E) 10

Answer Key

Level-1

Q1	(B)	Q11	(C)
Q2	(A)	Q12	(A)
Q3	(C)	Q13	(B)
Q4	(B)	Q14	(C)
Q5	(A)	Q15	(B)
Q6	(A)	Q16	(D)
Q7	(E)	Q17	(B)
Q8	(A)	Q18	(B)
Q9	(C)	Q19	(A)
Q10	(C)	Q20	(A)

Level-2

Q1	(A)	Q11	(C)
Q2	(C)	Q12	(C)
Q3	(D)	Q13	(E)
Q4	(A)	Q14	(A)
Q5	(D)	Q15	(C)
Q6	(E)	Q16	(A)
Q7	(C)	Q17	(C)
Q8	(C)	Q18	(B)
Q9	(E)	Q19	(C)
Q10	(D)	Q20	(D)

Level-3

Q1	(A)	Q6	(D)
Q2	(B)	Q7	(D)
Q3	(B)	Q8	(B)
Q4	(A)	Q9	(C)
Q5	(D)	Q10	(E)

Hints & Solutions

Level-1

Q1 Text Solution:

The ratio of their profit earned = 3 : 7 : 16 ---- (1)

Let the time for which P invested its capital = x years

The time for which Q invested its capital = y years

The time for which R invested its capital = Z years

P's profit = 7200 × x

Q's profit = 8400 × y

R's profit = 9600 × z

Ratio of profits = 7200x : 8400x : 9600x

⇒ 6x : 7y : 8z ---(2)

Comparing equation (1) and equation (2),

6x : 7y = 3 : 7

⇒ 6x/7y = 3/7

⇒ x/y = 3/7 × 7/6 = 1/2

So, x : y = 1 : 2

7y : 8z = 7 : 16

⇒ 7y/8z = 7/16

⇒ y/z = 7/16 × 8/7 = 1/2

So, y : z = 1 : 2

Multiply numerator and numerator by 2,

y : z = (2 × 1) : (2 × 2) = 2 : 4

So, x : y : z = 1: 2 : 4

∴ **The ratio of times for which they invested their capital is 1 : 2 : 4.**

Q2 Text Solution:

Let B invest Rs. y,

According to question,

Then , $\frac{60000}{y}=\frac{4}{5}$

$\Rightarrow 60000 \times 5 = 4 \times y$

$\Rightarrow 300000 = 4 \times y$

$\Rightarrow \frac{300000}{4} = y$

$\Rightarrow 75000 = y$

$or\ y = 75000$

Hence, Correct option is Rs.75000.

Q3 Text Solution:

Required ratio = 4x × 10:3x × 12:5x × 8

= 40:36:40

= 10:9:10

Q4 Text Solution:

Let the total profit be Rs. 100.

After paying to charity, Y's share = Rs.((100-10) $\times \frac{2}{3}$)

= Rs. (90$\times \frac{2}{3}$)

=Rs.(30$\times$2)

=Rs.60

If Y's share is Rs. 60, total profit = Rs. 100.

If Y's share Rs. 600, total profit =Rs.($\frac{100}{60}\times$600)= Rs.1000.

Hence, the correct option is 1000.

Q5 Text Solution:

Let their investments be Rs. A for 10 months, Rs. B for 6 months and Rs. C for 5 months respectively.

Then, 10A : 6B : 5C = 3: 5: 6

Now, $\frac{10A}{6B} = \frac{3}{5}$

$\Rightarrow 50A = 18B$

$\Rightarrow B = \frac{25}{9}A$

Now, 10A:5C=3:6

=>2A:C=1:2

=>2A$\times$2=1$\times$C

=>4A=C

Now, A:B:C= A : $\frac{25}{9}$A:4A

⇒A:B:C=9 : 25 : 36

Hence,correct option is 9 : 25 : 36.

Q6 Text Solution:

Ratio of Abhishek and Astha investment is 11:17

Let total profit be 100x

7% share goes in charity so remaining profit be 93x

Astha share is = Astha's ratio / Sum of all ratios $\times$Total Profit

1581 =17/28$\times$ 93x

28 = x

Total Profit is 100x = 100 $\times$ 28

Total Profit is Rs 2800

Q7 Text Solution:

Let capital of R = 'x'

Total annual profit received from the business = ₹30600

Ratio of profit share of P, Q, and R = [4500 × 12]: [6000 × 12]: [x × 10] = 5400: 7200: x

Profit share of R = $30600 \times \frac{x}{5400+7200+x} = 11700$

$34 \times \frac{x}{12600+x} = 13$

34x = 163800 + 13x

x = 7800

Hence, capital of R = x = ₹7800

Q8. Text Solution:

Let Shyam joined after X months

1200 × 12: (12 − X) × 3600: 2800 × (12 − X − 2)

1200 × 12: (12 − X) × 3600: 2800 × (10 − X)

12 × 1200 = (12 − X) × 3600

4 = (12 − X)

X = 8

Required answer = 10 − X = 2 months

Q9 Text Solution:

A share is Rs. 50000

B share is Rs. 70000

Ratio of their share is 50000:70000

Is 5:7

Total profit is Rs.80,000

B is an active partner and she gets 10% of the profit separately

So 10% of 80000 is

$\frac{10}{100} \times 80000 = 8000$

After 10% by B as active partner remaining profit is 90%

90% of 80000 is

$\frac{90}{100} \times 80000 = 72000$

B share is $= \frac{\text{B ratio}}{\text{Sum of all ratios}} \times \text{Total Profit}$

$= \frac{7}{12} \times 72000$

$= 42000$

Total amount taken by B is $8000 + 42000 = 50,000$

Q10 Text Solution:

Let the capital of Ajay (C1) = 5x

And the capital of Vijay (C2) = 9x

Time period spend by Ajay (T1) = 12 months

Let, time period spend by Vijay (T2) = 6 months

Apply formula: $\frac{C1 \times T1}{C2 \times T2} = \frac{P1}{P2}$

$\frac{5x \times 12}{9x \times 6} = \left(\frac{P1}{P2}\right)$

$\frac{10}{9} = \left(\frac{P1}{P2}\right)$

the ratio in which profit is divided between them is 10:9

Q11 Text Solution:

Let capital investment of Mohan and Nilesh be 8x and 7x respectively for first 5 months

Then, Remaining months = 12 − 5 = 7

For 7 months,

⇒ Mohan' share = (8x − ($\frac{1}{4}$ of 8x)) × 7 = 42x

⇒ Nilesh's share = (7x − ($\frac{1}{7}$ of 7x)) × 7 = 42x

Then, Mohan's share : Nilesh's share = {8x × 5 + 42x} : {7x × 5 + 42x} = 82 : 77

∴ Mohan's share = ($\frac{82}{159}$) × 4770 = Rs. 2460

Hence 2460 is the right answer.

Q12 Text Solution:

If investment are in the ratio a:b:c and duration are in the ratio x:y:z

Then the profit would be distributed in the ratio = ax:by:cz

Ratio of the equivalent capital of Rahul and Gina for two years

= $29500 \times 24 : 33500 \times 20 = 354 : 335$

Sum of ratios = 689

Share of x= $\frac{\text{ratio of x}}{\text{total ratio}} \times \text{total profit}$

Rahul's share= $\frac{354}{689} \times 137800 = 70800$

Gina's share of profit = 137800 - 70800 = 67000

Difference between their profits = 70800 - 67000 = 3800

Hence the answer is 3800.

Q13 Text Solution:

Investment of Harsh is Rs. 3000

Investment of Vikas is Rs. 5000

Ratio of their investment 3:5

$\frac{1}{5}$ of the profit is distributed equally between them

Let total profit be 5x

And x be distributed equally between them

So they both get $\frac{x}{2}$ each

Remaining profit of 4x is distributed according to ratio of their investment

Harsh get $= \frac{\text{Harsh ratio}}{\text{Sum of all ratios}} \times \text{Total Profit}$

$= \frac{3}{8} \times 4x$

$= 1.5x$

Vikas get $= \frac{\text{Vikas ratio}}{\text{Sum of all ratios}} \times \text{Total Profit}$

$= \frac{5}{8} \times 4x$

$= 2.5x$

Total profit of Harsh is $0.5x + 1.5x = 2x$

Total profit of Vikas is $0.5x + 2.5x = 3x$

Vikas got Rs. 600 more than Harsh

$3x - 2x = 600$

$x = 600$

Total profit is 5x$= 5 \times 600$

Total profit is Rs. 3000

Q14 Text Solution:

Let the investment of anil, ashish and deepak be $\frac{7x}{2} : \frac{4x}{3} : \frac{6x}{5}$

If investment are in the ratio a:b:c and duration are in the ratio x:y:z

Then the profit would be distributed in the ratio = ax:by:cz

According to question,

∴A:B:C = $(\frac{7x}{2} \times 4 + \frac{7x}{2} \times \frac{3}{2} \times 8)$: $\left(\frac{4x}{3} \times 12\right) : \left(\frac{6x}{5} \times 12\right)$

= 280x : 80x : 72x = 35 : 10 : 9

Sum of profit = 54

Share of x = $\frac{ratio\ of\ x}{total\ ratio} \times total\ profit$

Deepak's share in the profit = $\frac{9}{54} \times 21600 = 3600$ Rs

Q15 Text Solution:

Ratio of profit of A, B, and C = [4000 × 6 + 5500 × 6]: [4500 × 6 + 5500 × 6]: [5000 × 12] = 57: 60: 60 = 19: 20: 20

Total annual profit = ₹82600

Profit share of A = $\frac{82600}{59} \times 19$ = ₹26600

Q16 Text Solution:

From the given information,

Let the amount invested by Alpesh be a

Amount invested by Mukesh = a + 5000

Amount invested by Rakesh = a + 7000

Now, According to the question,

Rate = 12%, Total Interest = Rs 3240

$\Rightarrow \{a + (a + 5000) + (a + 7000)\} \times \frac{12}{100}$

$= 3240$

$\Rightarrow 3a + 12000 = \frac{3240}{12}$

⇒ 3a = 15000 ⇒ a = 5000

Therefore, amount invested by Mukesh = 5000 + 5000 = Rs 10000

Q17 Text Solution:

Amount invest by Amit (C1) is 3000

Amount invest by Sumit (C2) is 5000

Amount invest by Nain is (C3) 12000

Amit's time (T1) be 12 months

Sumit's time (T2) be 6 months

Nain's time (T3) be 6 months

Profit to be divided is 4600

Profit divided in the ratio: $(C1 \times T1 : C2 \times T2 : C3 \times T3)$

$3000 \times 12 : 5000 \times 6 : 12000 \times 6$

6:5:12

Sum of ratios is 23

Amit's shares $= \frac{Amit's\ ratio}{\text{Sum of all ratios}} \times \text{Total Profit}$

$= \frac{6}{23} \times 4600$

$= 1200$

Amit's share is Rs.1200

Q18 Text Solution:

The ratio of profit share of Rahul, Mani, and Anu = [7200 × 15]: [12000 × 5 + 10000 × 10]: [15000 × 10]

= 108000: 160000: 150000

= 54: 80: 75

∴ Hence the answer is 54: 80: 75.

Q19 Text Solution:

Ratio of their profit share $= \left(3200 \times 4 + 3200 \times \frac{9}{8} \times 8\right) : \left(4400 \times 4 + 4400 \times \frac{10}{11} \times 8\right)$

$=(128 + 288) : (176 + 320)$

=416: 496

=26: 31

Let their profit share be 26k and 31k

31k - 26k = 1750

5k =1750

k =350

Profit share of Bunty = 31k = $31 \times 350 = 10850$

Q20 Text Solution:

Investment of A,

5 units for 6 months

Then, (5 - $\frac{5}{7} \times 5$) for next 6 months

So, total investment of A = 5 $\times 6 + \left(5 - \frac{5}{7} \times 5\right) \times 6 = \frac{270}{7}$

Investment of B,

7 units for 6 months

Then,(7 + 7) for next 6 months

So, total investment of B = 7 $\times 6 + (7 + 7) \times 6 = 126$

Investment of C,

9 units for 6 months

Then, (9 - $\frac{7}{9} \times 9$) for next 6 months

So, total investment of C = 9 $\times 6 + \left(9 - \frac{7}{9} \times 9\right) \times 6 = 66$

Thus, ratio of profit = A:B:C = $\frac{270}{7} : 126 : 66$ = 270:882:462

= 45: 147:77

Hence, share of C = $\frac{77}{45+147+77} \times 268731$=76923

Level-2

Q1 Text Solution:

Total profit = ₹76700

let share of pawan =x

share of joy=y

x+y=76700....(1)

x-y=14300.....(2)

by solving (1) and (2)

Share of Pawan = ₹45500

Share of Jay = ₹31200

Ratio of profit share of Pawan to Jay = [42000 × (3 + x)]: [72000 × x] = 45500: 31200

(126 + 42x): 72x = 35: 24

(18 + 6x): 3x = 5: 1

18 + 6x = 15x

x = 2

Hence, total tenure of the business = 3 + x

= 5 years

Q2 Text Solution:

Total profit $= 14000$

So, salary of Suman $=$ x% of 14000

$= \frac{x}{100} \times 14000$

$= 140x$

Remaining profit $= 14000 - 140x$

So, total profit of Suman

$= 140x + \frac{3}{21}(14000 - 140x)$

$4000 = 140x + \frac{3}{21}(14000 - 140x)$

$4000 = 140x + 2000 - 20x$

$2000 = 120x$

$\frac{50}{3} = x$

So, salary of Suman $= \frac{50}{3} \times 140$

salary of Suman$= 2333.33$

Q3 Text Solution:

Let the amount invested by 'A' and 'B' be Rs. 'xy' and Rs. (x + 3)y

Profit earned by 'B' = 7800 - 3600 = Rs. 4,200

Ratio of profit shares of 'A' and 'B' = (6xy + 12xy) : {(x + 3) X 12y} = 18xy:(12xy + 36y)

ATQ;

{18xy/(12xy + 36y)} = (3600/4200) = (6/7)

Or, 18xy X 7 = 6 X (12xy + 36y)

Or, 7x = 4x + 12

Or, 3x = 12

So, x = 4

Hence, option d.

Q4 Text Solution:

Increased investment of 'A' = 3600 ×1.25 = Rs. 4,500

Increased investment of 'B' = 4950 + 900 = Rs. 5,850

Increased investment of 'C' = 6750 ×1.2 = Rs. 8,100

Since time period of investment is equal, the respective ratio of profit shares of 'A', 'B', and 'C' =

(3600 + 4500):(4950 + 5850):(6750 + 8100)

= 6:8:11

So, let the profit shares of 'A', 'B', and 'C' be Rs. '6x', Rs. '8x' and Rs. '11x', respectively

According to the question,

8x - 6x = 2000

So, x = 2000 ÷ 2 = 1000

Therefore, profit shares of 'C' = 1000 X 11 = Rs. 11,000

Hence, option a.

Q5 Text Solution:

Amount invested by Amit $= 6000$

Amount invested by Ragav $= 10000$

Amount invested by Amit after x months is 7000

Amount invested by Ragav after withdrawal of Rs. 1000 is $= 9000$

Total Amount invested by Amit

$= 6000 \times x + (12 - x)7000$

Total Amount invested by Ragav

$= 10000 \times x + (12 - x)9000$

Ratio of profit distributed by them is 5:7

Apply formula: $\frac{C1 \times T1}{C2 \times T2} = \frac{P1}{P2}$

$\frac{6000 \times x + (12-x)7000}{10000 \times x + (12-x)9000} = \left(\frac{5}{7}\right)$

$\frac{6x + (12-x)7}{10x + (12-x)9} = \left(\frac{5}{7}\right)$

$42x + 588 - 49x = 50x + 540 - 45x$

$48 = 12x$

$4 = x$

Q6 Text Solution:

Akshay invested Rs.5000

Kunal invested 10% more than Akshay $= 5000 \times \frac{110}{100} = 5500$

Sum of the amount invested by Kunal and Gourav is Rs.10000

Gourav investment is $(10000 - 5500) = 4500$

Time spent by Kunal is 12 months

Time spent by Gourav is 9 months

Time spent by Akshay is 5 months

Ratio of their profit share is

$5500 \times 12 \ : \ 4500 \times 9 \ : \ 5000 \times 5$

132 : 81 : 50

Sum of Ratio is $132 + 81 + 50 = 263$

Akshay's shares

$= \frac{Akshay's\ ratio}{\text{Sum of all ratios}} \times \text{Total Profit}$

$= \frac{50}{263} \times 7890$

$= 1500$

Akshay's share is Rs.1500

Q7 Text Solution:

Let initial capital of P and Q is 5x and 7x respectively.

Ratio of profit share of P to Q = [5x × 3 + (5x + 2000) × 5]: [7x × 3 + (7x - 2000) × 5] = 15: 17

[40x + 10000]: [56x - 10000] = 15: 17

680x + 170000 = 840x - 150000

160x = 320000

x = 2000

The initial capital of P and Q is ₹10000 and ₹14000 respectively.

The ratio of profit share of P to Q at the end of a year = [10000 × 3 + 12000 × 9]: [14000 × 3 + 12000 × 9]

= 138: 150

= 23: 25

Q8 Text Solution:

The ratio of investment of P and Q is 42000: 54000 = 7: 9

Let total profit = X

Using the data provided in the question, we get

Difference between Q and P's profit $= \frac{9}{16} \times \frac{X}{2} - \frac{7X}{16 \times 2} = 510$

2X = 510 × 16 × 2

X = Rs. 8160

Q9 Text Solution:

Ratio of profit share of A to B = [7000 × 15]: [8400 × 10] = 105000: 84000 = 5: 4

Let total profit = 100x

Remaining profit = 100x - 28% of 100x = 72x

Profit share of A = 40x + 14x = 54x

Profit share of B = 32x + 14x = 46x

Required ratio = 54x: 46x

= 27: 23

Q10 Text Solution:

Let overall profit be 92x.

Ratio of their profit $= 15000 : 8000 = 15 : 8$

Amount received by A as salary $= 25\%\ of\ 92x \ = \ 23x$

Remaining profit $= 92x - 23x \ = \ 69x$

A/Q;

A's share of profit $= \frac{15}{23} \times \ 69x \ = \ 45x$

& B's share $= \frac{8}{23} \times 69 \ = \ 24x$

Amount received by A = 44000 +Amount received by B

$=> \ 45x + 23x \ = \ 44000 + \ 24x$

$=> \ 68x \ = \ 44000 + 24x$

$=> \ 44x \ = \ 44000$

$=> \ x = 1000$

Overall profit$= \ 92x = \ 92 \times 1000 = \ 92000$

Q11 Text Solution:

Arun's profit share = Rs 4000

Varun's profit share = 4000 – 1000 = Rs 3000

Tarun's share = 12000 – (4000 + 3000) = Rs 5000

Ratio of profits of Arun, Varun and Tarun = 4000 : 3000 : 5000 = 4 : 3 : 5

So, total investments of Arun, Varun and Tarun are in the ratio of 4 : 3 : 5

Let Arun, Varun and Tarun invested Rs 8x, 6x and 15x respectively and their time of investment was T1, T2 and T3 months respectively.

8x × T1 : 6x × T2 : 15x × T3 = 4 : 3 : 5
8T1 : 6T2 = 4 : 3
T1 : T2 = 1 : 1
6T2 : 15T3 = 3 : 5
T2 : T3 = 3 : 2
Required ratio = 3 : 3 : 2
Option '3 : 3 : 2' is the correct answer.

Q12 Text Solution:
Let the initial investments of Arvind, Balkrishna and Chandrabhan be Rs 5x, 3x and 4x respectively.
According to the question,
Arvind's investment : Balkrishna's investment : Chandrabhan's investment for a year
= (5x × 8+10x× 4) : (3x× 8+(5x/2) × 4) : (4x × 8+2x× 4)
= 80x : 34x : 40x = 40 : 17 : 20
Difference between the profits earned by Arvind and Balkrishna
= $\frac{40-17}{20}$ × 3300
= Rs 3795
Option '3795' is the correct answer.

Q13 Text Solution:
Let capital of Mayank and Sudeep is 'x' and 'x + 5000' respectively.
Ratio of profit share of Mayank to Sudeep = [x × 3 + (x + 10000) × 9]: [(x + 5000) × 9] = 11340: (19440 - 11340)
(12x + 90000): (9x + 45000) = 7: 5
60x + 450000 = 63x + 315000
3x = 135000
x = 45000
Sum of initial capital of both the persons = x + (x + 5000)
= 45000 + 50000
= ₹95000

Q14 Text Solution:
Total profit at the end of year = Rs.25800
Profit share of B = Rs.12600
Profit share of A = 25800 –12600 = Rs.13200
Total investment = Rs.250000
Investment made by A and B be X and Y
So,
$\frac{\text{profit of A}}{\text{profit of B}} = \frac{X\times 12}{Y\times 9} = \frac{13200}{12600}$
Given that X+ Y= 250000
Y = 25000-x
$\Rightarrow \frac{4X}{(250000-X)\times 3)} = \frac{22}{21}$
$\Rightarrow \frac{4X}{(250000-X)} = \frac{22}{7}$
⇒28X=22×250000-22X
⇒ 50X = 5500000
⇒ X= Rs.110000
Hence "110000" is the right answer.

Q15 Text Solution:
1st 3month = x: 2x: 3x
2nd 3 month = 2y:3y:2y
According to question
3x+2y-(x+2y) = 1600
x = 800
Astha=2400+ 6y+6000
= 6y+8400
Bijli =4800+9y+9000
= 9y+13800
Champa =7200+6y+12000
=6y+19200
3y= 1500
y = 500
Astha->6y+8400
= 11400
Bijli ->9y+13800
=18300
Champa->6y+19200
=22200
Ratio
114 : 183 : 222
38 : 61 : 74
Hence " 38 : 61 : 74" is the right answer.

Q16 Text Solution:
Given:
First 4 month Sonal invested Rs 120000 per month=120000 × 4
After 4 months Sonal invested Rs 80000 per

month=(120000+80000)×8

First 5 month Tilak invested Rs 70000 per month=70000 × 5

After 5 months Tilak invested Rs 70000 per month=(70000+30000)×7

Two months were left Swapan also joined investing

Rs 400000=400000×2

Sonal : Tilak : Swapan

(120000 × 4 + 200000 × 8) : (70000 × 5 + 100000 × 7) : (400000 × 2)

208 : 105 : 80

Now,

12.5% of 1572000 =$1572000 \times \frac{12.5}{100} = 196500$

Therefore, Profit of:

Sonal =$\frac{208}{393} \times 196500 = Rs\ 104000$

Tilak =$\frac{105}{393} \times 196500 = Rs\ 52500$

Swapan =$\frac{80}{393} \times 196500 = Rs\ 40000$

Q17 Text Solution:

1st 3month = x: 2x: 3x

2nd 3 month = 2y:3y:2y

According to question

3x+2y-(x+2y) = 1600

x = 800

Astha=2400+ 6y+6000

= 6y+8400

Bijli =4800+9y+9000

= 9y+13800

Champa =7200+6y+12000

=6y+19200

ATQ

$\frac{Bijli's\ profit}{\text{total profit}} = \frac{29}{83}$

$\frac{9y+13800}{21y+41400} = \frac{29}{83}$

83(9y + 13800)=(21y+41400)29

y=400

Astha's profit

=6y+8400=2400+8400=10800

Hence "10800" is the right answer.

Q18 Text Solution:

Ratio of share in profit = $1.5 \times 24 : 1 \times 18 : 2 \times t = 18 : 9 : t$

10% of 66000 =Rs 6600

Remaining = 66000 -6600 =Rs 59400

Total share of A in profit

$\frac{18}{27+t} \times 59400 + 6600 = 39000$

$\frac{18}{27+t} \times 59400 = 32400$

$27 + t = 33$

$t = 6$

Q19 Text Solution:

1st 3 months = x: 2x: 3x

2nd 3 months = 2y:3y:2y

According to question

3x+2y-(x+2y) = 1600

x = 800

Astha=2400+ 6y+6000

= 6y+8400

Bijli =4800+9y+9000

= 9y+13800

Champa =7200+6y+12000

=6y+19200

Investment by Astha is

6y+8400= 12600

y =700

total investment by Bijli and Champa

=15y+13800+19200

=10500+33000

= 43500

Hence "43500" is the right answer.

Q20 Text Solution:

From the given information,

The ratio of Ramesh's: Shankar's: Mohit's share = 3900 × 12 : 5200 × 9 : a × 6500 (assume Mohit joins for a months) = 36 : 36 : 5a ..... (1)

The total money, Mohit has withdrawn from his profit in a months = 100 × a = 100a

Remaining = 2900 – 100a, it was divided in the ratio of 6 : 6 : 1 respectively.

So Ramesh's share $= \frac{6}{13} \times (2900 - 100a) =$ Shankar's share

Mohit's share $= \frac{1}{13} \times (2900 - 100a)$

If Mohit had not withdraw Rs. 100 per month then his profit would have been,

$= \frac{1}{13} \times (2900 - 100a) + 100a$

From the equation (i) , Rammesh's share: Mohit's share

$\Rightarrow \frac{36}{5a} = \frac{\frac{6}{13} \times (2900 - 100a)}{\frac{1}{13} \times (2900 - 100a) + 100a}$

$\Rightarrow \frac{36}{5a} = \frac{6 \times (2900 - 100a)}{2900 - 100a + 1300a}$

$\Rightarrow \frac{36}{5a} = \frac{6 \times (2900 - 100a)}{2900 + 1200a}$

$\Rightarrow \frac{36}{5a} = \frac{6 \times (29 - a)}{29 + 12a}$

$\Rightarrow \frac{36 \times (29 + 12a)}{5a} = 174 - 6a$

$\Rightarrow 1044 + 432a = 870a - 30a^2$

$\Rightarrow 30a^2 - 438a + 1044 = 0$

$\Rightarrow 5a^2 - 73a + 174 = 0$

$\Rightarrow a = \frac{73 \pm 43}{10}$

$\Rightarrow a = \frac{73 + 43}{10}$ or $\frac{73 - 43}{10}$

$\Rightarrow a = 11.6 \; or \; 3$

Therefore, Mohit joins for 11.6 months or 3 months.

Level-3

Q1 Text Solution:

Let the investment of 'A' = Rs. 'x'

Then investment of 'B' = Rs. (x + 2000)

Investment of 'C' = (x + 2000) × 0.75 - 500 = 0.75x + 1500 - 500 = Rs. (0.75x + 1000)

Let the time period for which 'A' invested be '10y' months

Then time period for which 'C' invested = (10y + 4) months

Time period for which 'B' invested = 10y × 0.9 = '9y' months

Ratio of profit shares of 'A' and B' respectively = (x × 10y):{(x + 2000) ×9y}

= 10xy:(9xy + 18000y)

According to the question,

10xy × 1.65 = 9xy + 18000y

Or, 16.5xy = 9xy + 18000y

Or, 7.5xy = 18000y

So, x = 18000 ÷ 7.5 = 2400

So, investments of 'A', 'B' and 'C' are Rs. 2,400, Rs. 4,400 and Rs. 2,800, respectively

So, ratio of profit shares of 'A' and 'B' = 24000y:39600y

We have, 39600y = 24000y × 1.65

So, the value of 'y' cannot be determined.

For I:

Since, the value of 'y' cannot be determined, the time period of investment of 'A' also cannot be determined.

So, statement I cannot be determined.

For II:

Ratio of profit shares of 'B' and 'C' respectively = (4400 × 9y):{2800 × (10y + 4)}

= 39600y:(28000y + 11200)

Since, the value of 'y' cannot be determined, the ratio of profit shares of 'B' and 'C' also cannot be determined.

So, statement II cannot be determined.

For III:

Average investment of 'A' and 'B' = (2400 + 4400) ÷ 2 = Rs. 3,400

So, statement III can be determined.

Hence, option A.

Q2 Text Solution:

Option I:

Investment of A for second year = 2400 × 0.80 = Rs. 1,920

Investment of B for second share = 2500 × 0.70 = Rs. 1750

Ratio the profits of A to B = 2400 + 1920: 2500 + 1750 = 4320: 4250 = 432: 425

So the profit percent of A out of the total profit = 432\(\div\)(432 + 425) × 100 = 43200\(\div\)857 = 50.4%

So option I can be the answer.

Option II:

Investment of A for second year = 2400 × 0.75 = Rs. 1,800

Investment of B for second share = 2500 × 0.70 = Rs. 1750

Ratio the profits of A to B = 2400 + 1800: 2500 + 1750 = 4200: 4250 = 84: 85

So the profit percent of A out of the total profit = 84\(\div\)(84 + 85) × 100 = 8400\(\div\)169 = 49.7%

So option II can't be the answer.

Option III:

Investment of A for second year = 2400 × 0.88 = Rs. 2,112

Investment of B for second share = 2500 × 0.84 = Rs. 2100

Ratio the profits of A to B = 2400 + 2112: 2500 + 2100 = 4512: 4600 = 564: 575

So the profit percent of A out of the total profit = 564\(\div\)(564 + 575) × 100 = 56400\(\div\)1139 = 49.51%

So option III can't be the answer.

Hence, option b.

Q3 Text Solution:

From I:

Ansu's investment = 18000 × $\frac{4}{9}$ = Rs. 8000
Arya's investment = 18000 × $\frac{5}{9}$ = Rs. 10000
Capital Ratio = {8000 × 8 + (8000 × 1.5) × 4}: (10000 × 8) = 7:5
Now, Arya got Rs. 5000
Now,
5 ratio → 5000
7 ratio → 7000
12 ratio → 12000
Hence, statement I holds.
From II:
Ansu;s investment = 18000 × $\frac{1}{3}$ = Rs. 6000
Arya's investment = 18000 × $\frac{2}{3}$ = Rs. 12000
Capital Ratio = {6000 × 8 + (6000 × 1.5) × 4}: (12000 × 8) = 7:8
Now, Arya got Rs. 5000
Now,
8 ratio → 5000
15 ratio → (5000 × $\frac{15}{8}$) = 9375
Hence, statement II holds.
From III:
Ansu;s investment = 18000 × $\frac{5}{9}$ = Rs. 10000
Arya's investment = 18000 × $\frac{4}{9}$ = Rs. 8000
Capital Ratio = {10000 × 8 + (10000 × 1.5) × 4}: (8000 × 8) = 35:16
Now, Arya got Rs. 5000
16 ratio → 5000
51 ratio → (5000 × $\frac{51}{16}$) = 15937.5
Hence, statement III does not hold.
Hence, option b.

Q4 Text Solution:

Let M's investment = Rs. 'x'
So, N's investment = Rs. (x + 1800)
And O's investment = Rs. (x + 900)
Now,
Profit share of M = $\frac{5760\ \times\ 100}{15\ \times\ 2}$ = Rs.19200
Profit share of O = $\frac{4500\ \times\ 100}{\left(5\ \times\ 3 \right)}$ = Rs.30000
Ratio of profit shares of M to O = 19200:30000 = 16:25
So,
$\frac{x}{\left(x\ +\ 900 \right)} = \frac{16}{25}$
25x = 16x + 14400
x = 1600
From A,
M's investment = Rs.1600
N's investment = 1600 + 1800 = Rs.3400
Required ratio = 1600:3400 = 8:17
From B,
Since, we don't know the investment period of N, from which we cannot determine the profit-sharing ratio between of M, N and O.
So, total profit received by all the 3 persons together cannot be determined.
From C,
Value of 'T' cannot be determined.
Hence, only A can be determined.

Q5 Text Solution:

Ratio of profit share of Akash, Sunil and Viru = [(A + 32) × 2B]:[A × 2B]:[1.2 × (A + 32) × B]
So, [(A + 32) × 2B]/[1.2 × (A + 32) × B] = 6B/9D
So, 2/1.2 = 2B/3D
So, D = 1.2B/3 = 0.4B
And, [A × 2B]:[1.2 × (A + 32) × B] = 14C/9D
So, A/[0.6 × (A + 32)] = 14C/9D
Or, A = 268.8C/[9D – 8.4C]
And, [(A + 32) × 2B]:[A × 2B] = 6B/14C = 3B/7C
Or, A = 224C/[3B – 7C]
Hence, option D.

Q6 Text Solution:

Let the increased investment of 'A' = Rs. 'Y'
Then, ratio of profit shares of 'A', 'B' and 'C' at the end of 1 year
= (800 × 6 + Y × 6):(1200 × 6 + 1200 × 0.75 × 6):(1500 × 6 + 1500 × 0.6 × 6) = 6:7:8
Or, (4800 + 6Y):(12600):(14400) = 6:7:8
Or, (4800 + 6Y) ÷ 6 = 12600 ÷ 7 = 1800
So, Y = 1000

So, ratio of profit shares of 'A', 'B' and 'C' at the end of 2 years

= (800 × 6 + 1000 × 18):(1200 × 6 + 900 × 18): (1500 × 6 + 900 × 18)

= (22800):(23400):(25200) = 38:39:42

So, profit share of 'B' at the end of 2 years = 11900 ÷ (38 + 39 + 42) × 39 = Rs. 3,900

Hence, option d.

Q7 Text Solution:

The profit share of P = profit share of Q = Rs. M

Profit weightage of P = [2Z x (Y – 4) + 2 x 2Z x (24 – Y + 4)]

= [2Z x (Y – 4) + 4Z x (28 – Y)]

Initial investment of R = Z x 500% = Rs. 5Z

Profit weightage of R = [5Z x 8 + 2 x 5Z x (24 – 8 - 4 – Y + 4)]

= [40Z + 10Z x (16 – Y)]

Now,

[2Z x (Y – 4) + 4Z x (28 – Y)] = [40Z + 10Z x (16 – Y)]

2Y – 8 + 112 – 4Y = 40 + 160 – 10Y

8Y = 96

Value of Y = 12

Required value = 12 + 8 = 20

Hence answer is option D

Q8 Text Solution:

Ratio of their profit = [30000 × 30]: [40000 × (30 – P)]: [60000 × (30 – Q)] = 90: (120 – 4P): (180 – 6Q)

Let total profit = 90 + (120 – 4P) + (180 – 6Q) = (390 – 4P – 6Q)

Profit amount of Vipin = $\frac{120 - 4P}{390 - 4P - 6Q} = \frac{3520}{10780} = \frac{16}{49}$

$\frac{30 - P}{390 - 4P - 6Q} = \frac{4}{49}$

49(30 – P) = 4(390 – 4P – 6Q)

1470 – 49P = 1560 – 16P – 24Q

24Q – 33P= 90 ..... (1)

Profit amount of Alok = $\frac{90}{390 - 4P - 6Q} = \frac{3300}{10780} = \frac{15}{49}$

$\frac{6}{390 - 4P - 6Q} = \frac{1}{49}$

6 × 49 = (390 – 4P – 6Q)

294 = 390 – 4P – 6Q

4P+6Q = 96 ..... (2)

From (1) and (2) –

(24Q – 33P) – 4(4P + 6Q) = 90 – 4 × 96

49P = 294

P = 6

From (2) –

4 × 6 + 6Q = 96

6Q = 72

Q = 12

Hence, P = 6 and Q = 12

Q9 Text Solution:

Present age of B = 5Y years

Present age of A = 5Y $\times \frac{160}{100}$ = 8Y years

Present age of C = 8Y $\times \frac{32.5}{100}$ = 3Y years

According to question,

8Y – 4 = 3Y $\times$ 2

8Y – 6Y = 4

2Y = 4

Y = 2

Time period for which P,Q and R invested their investment

P invested for 10 months

Q invested for 8 months

R invested for 9 months

Profit sharing ratio of P,Q and R

= (X+800) $\times$ 10 : (X – 600) $\times$ 8 : X $\times$ 9

According to question:

$\frac{(X - 600) \times 8}{\left\lbrack \left(\left(X + 800 \right) \times 10 \right) + 9X \right\rbrack} = \frac{325}{1400 - 325}$

$\frac{8X - 4800}{10X + 8000 + 9X} = \frac{325}{1075}$

$\frac{8X - 4800}{10X + 8000 + 9X} = \frac{13}{43}$

344 X – 206400 = 247X + 104000

97X = 310400

X = 3200

Z = X $\div$ 4Y

Z = 3200 $\div$ 8

Z = 400

Q10 Text Solution:

The logic for the given series is

27 + 15 = 27 + (3 × 5) = 42

42 + 35 = 42 + (5 × 7) = 77

77 + 63 = 77 + (7 × 9) = 140

140 + 99 = 140 + (9 × 11) = 239

239 + 143 = 239 + (11 × 13) = 382

382 + 195 = 382 + (13 × 15) = 577

Thus the wrong number is 372 and the value of n is "2"

According to public sector bank:

Simple Interest = 8500 × (4x% × 2)

Simple Interest = 8500 × (8x%)

Simple Interest = 680x

According to private sector bank:

Simple Interest = $\frac{8500 + 680x}{2}$ + 150 × (x% × 2)

Simple Interest = $\frac{8500 + 680x + 300}{2}$ × (x% × 2)

Simple Interest = (8800 + 680x) × (x%)

Simple Interest = (88x + 6.8x²)

680x = 88x + 6.8x² + 2790

6.8x² – 592x + 2790 = 0

After solving this

x = 5

Then the value of (x × n)

= 5 × 2

= 10