

STAFF SELECTION COMMISSION – Solved Papers

PARTNERSHIP (Some Important Exercises)

1. A, B and C invest Rs. 15000, Rs. 20000 and Rs. 25000 respectively in a business. The profit earned is Rs. 1200. Find the share of A in the profit.

- (1) Rs. 300 (2) Rs. 400
(3) Rs. 500 (4) Rs. 600

Ans : 1

This is a case of simple partnership

Ratio of investments,

$$\begin{aligned} A : B : C \\ = 15000 : 20000 : 25000 \\ = 3 : 4 : 5 \end{aligned}$$

$$\begin{aligned} \text{Sum of the ratios} &= 3 + 4 + 5 \\ &= 12 \end{aligned}$$

Share in the profit.

$$\text{For A} = \frac{3}{12} \times 1200 = \text{Rs. } 300$$

2. Rs. 52000 is to be divided among the partners A, B and C. The ratio of their investments is $\frac{1}{12} : \frac{1}{18} : \frac{1}{24}$. Find the share of A.

- (1) Rs. 16000 (2) Rs. 24000
(3) Rs. 12000 (4) Rs. 18000

Ans : 2

This is a case of simple partnership

$$\frac{1}{12} : \frac{1}{18} : \frac{1}{24} : \frac{6}{72} : \frac{4}{72} : \frac{3}{72}$$

(Here 72 is the LCM of 12, 18 and 24)

$$= 6 : 4 : 3$$

$$\begin{aligned} \text{Sum of the ratios} &= 6 + 4 + 3 \\ &= 13 \end{aligned}$$

$$\text{and } \frac{52000}{13} = 4000$$

A's share =

$$6 \times 4000 = \text{Rs. } 24000$$

3. A, B and C invest Rs. 1000, Rs. 4000 and Rs. 5000 respectively in a business. At the end of the year the balance sheet shows a loss of 20% of the total initial investment. Find the share of loss of B.

- (1) Rs. 4000 (2) Rs. 200
(3) Rs. 800 (4) Rs. 1200

Ans : 3

Total initial investment

$$= \text{Rs. } 1000 + \text{Rs. } 4000 + \text{Rs. } 5000$$

$$= \text{Rs. } 10,000$$

Total loss = 20% of total initial investment

$$= \frac{20}{100} \times 10,000 = \text{Rs. } 2000$$

This is an example of simple partnership.

∴ Rs. 2000 has to be divided among the partners in proportion to their investments.
Ratio of investments.

$$A : B : C = \text{Rs. } 1000 : \text{Rs. } 4000 : \text{Rs. } 5000 = 1 : 4 : 5$$

$$\text{Sum of ratios} = 1 + 4 + 5 = 10$$

$$1 \Rightarrow \frac{\text{Rs. } 2000}{10} = \text{Rs. } 200$$

Share of loss for B

$$= 4 \times \text{Rs. } 200 = \text{Rs. } 800$$

4. A, B and C enter into a partnership. A invests Rs. 2400 for 4 years. B Rs. 2800 for 8 years and C Rs. 2000 for 10 years. They earn Rs. 1170. Find the share of each.

- (1) Rs. 420 (2) Rs. 540
(3) Rs. 108 (4) Rs. 216

Ans : 4

This is a case of compound partnership.

Rs. 2400 investment for 4 years earns as much as Rs. 2400 x 4 = Rs. 9600 in 1 year.

Similarly, Rs. 2800 for 8 years is equivalent to Rs. 2800 x 8 = Rs. 22400 in 1 year

Rs. 2000 for 10 years is equivalent to Rs. 2000 x 10

$$= \text{Rs. } 20,000 \text{ in 1 year}$$

The profit is, therefore, divided in the ratio

$$\text{Rs. } 9600 : \text{Rs. } 22400 : \text{Rs. } 20000$$

$$\text{or, } 12 : 28 : 25$$

Sum of the ratios = $12 + 28 + 25 = 65$

$$\text{Rs. } \frac{1170}{65} = \text{Rs. } 18$$

So, A's share = $12 \times \text{Rs. } 18 = \text{Rs. } 216$

5. A and B are partners in a firm. A invests Rs. 15000 and B Rs. 25000. A is the working partner and gets 20% of the profit for his contribution in the management of the firm. B is the sleeping partner. If the profit is 475, find the shares of B.

- (1) Rs. 237.5 (2) Rs. 257.5
(3) Rs. 247.5 (4) Rs. 238.5

Ans : 1

First we have to deduct the payment to be made to A from the total profit for his contribution in the management of the firm.

$$20\% \text{ of Rs. } 475 = \text{Rs. } 95$$

$$\text{Balance profit} = \text{Rs. } [475 - 95] = \text{Rs. } 380.$$

This has to be divided between A and B in the ratio of their investments i.e.,

$$\text{Rs. } 15000 : \text{Rs. } 25000 = 3 : 5$$

B's share

$$= \text{Rs. } 380 \times \frac{5}{8} = \text{Rs. } 237.5$$

6. A starts an industry with Rs. 20 lakh. After 4 months he enters into a partnership with B who contributes Rs. 40 lakhs. C joins them after another 3 months with a capital of Rs. 60 lakhs. At the year end, the

balance sheet shows a profit of Rs. 74000. Find the share of A in the profit.

- (1) Rs. 32000 (2) Rs. 24000
(3) Rs. 18000 (4) Rs. 16000

Ans : 2

A's Rs. 20 lakhs is for the whole year i.e., 12 months which is equivalent to $20 \times 12 = \text{Rs. } 240$ lakhs for 1 month B's Rs. 40 lakhs for $(12-4) = 8$ months is equivalent to $40 \times 8 = 320$ lakhs for 1 month. C's Rs. 60 lakhs for 3 months is equivalent to $60 \times 3 = \text{Rs. } 180$ lakhs for 1 month.

The share in the profit should be in the following ratio,

$$A : B : C = 240 : 320 : 180$$

$$= 12 : 16 : 9$$

$$\frac{\text{Rs. } 74000}{12+16+9} = \text{Rs. } 2000$$

$$\text{A's share} = \text{Rs. } (12 \times 2000)$$

$$= \text{Rs. } 24000$$

7. Ravi and Shyam enter into a partnership and together start a business with contributions of Rs. 15000 and Rs. 20000. After 4 months Mohan also joins them with contribution of Rs. 22500. After 9 months Shyam withdraws his contribution. At the end of year there is a profit of Rs. 9000. Find the share of each in the profit.

- (1) Rs. 4000 (2) Rs. 3000
(3) Rs. 3500 (4) Rs. 3600

Ans : 2

Ravi : Shyam : Mohan

$$= (15000 \times 12) : (20000 \times 9) :$$

$$= (22500 \times 8)$$

$$= 180000 : 180000 : 180000$$

$$= 1 : 1 : 1$$

Therefore, the share of each in the profit is

$$\frac{\text{Rs. } 9000}{3} = \text{Rs. } 3000$$

8. A, B and C invest their capital into a partnership business in the following manner. A invests one-half of the capital for three fourth of the time, B invests one-third of the capital for one half of the time and C invests the remaining capital for the whole time. If the profit earned is Rs. 510, how should A get?

- (1) Rs. 260 (2) Rs. 250
(3) Rs. 270 (4) Rs. 280

Ans : 3

C's share of the capital

$$= 1 - \left(\frac{1}{2} + \frac{1}{3} \right) = \frac{1}{6}$$

$$A : B : C = \left(\frac{1}{2} \times \frac{3}{4} \right)$$

$$\left(\frac{1}{3} \times \frac{1}{2} \right) : \left(\frac{1}{6} \times 1 \right)$$

$$= \frac{3}{8} : \frac{1}{6} : \frac{1}{6}$$

$$= \frac{9}{24} : \frac{4}{24} : \frac{4}{24}$$

$$= 9 : 4 : 4$$

$$\frac{\text{Rs.}510}{9+4+4} = \text{Rs.}30$$

Profit share of A = Rs. $30 \times 9 =$
Rs. 270

9. Ravi starts a business with Rs. 45000. After a certain period of time he is joined by Mohan who invests Rs. 30000. At the end of the year they divide the profit in the ratio 9 : 4. When did Mohan join Ravi?

- (1) After 3 months
(2) After 5 months
(3) After 6 months
(4) After 4 months

Ans : 4

Suppose Mohan joins Ravi after x months.

Then, during the year Mohan's investment was for $(12-x)$ months.

$$\therefore \frac{45000 \times 12}{30000 \times (12-x)} = \frac{9}{4}$$

$$\Rightarrow \frac{12-x}{12} = \frac{45000}{30000} \times \frac{9}{4}$$

$$\Rightarrow \frac{12-x}{12} = \frac{2}{3} \Rightarrow 36 - 3x = 24$$

$$\therefore x = 4 \text{ months}$$

10. A, B and C enter into partnership with capital contribution of Rs. 25,000, Rs. 30,000 and Rs. 15000 respectively. A is the working partner and he gets 30% of the profit for managing the business. The balance profit is distributed in proportion to the capital investment. At the year-end, A gets Rs. 200 more

than B and C together. Find the total profit.

- (1) Rs. 2500 (2) Rs. 2000
(3) Rs. 2200 (4) Rs. 2400

Ans : 2

Let the total profit be Rs. 100

A's share for managing the business which is 30% of profit = Rs. 30

Balance profit = Rs. $(100 - 30) =$
Rs. 70

Ratio of capital investment :

A : B : C = Rs. 25000

: Rs. 30000 = Rs. 15000

= 5 : 6 : 3

Now, $\frac{70}{5+6+3} = \text{Rs.}5$

Share of profit A's = Rs. $5 \times 5 =$
Rs. 25

B's = Rs. $5 \times 6 =$ Rs. 30

C's = Rs. $5 \times 3 =$ Rs. 15

A's total share of profit

= Rs. 30 + Rs. 25 = Rs. 55

Profit share of B and C put together

= Rs. 30 + Rs. 15 = Rs. 45

A's - (B's + C's) share

= Rs. 55 - Rs. 45 = Rs. 10

When the difference is Rs. 10

the total profit is Rs. 100

When the difference is Rs. 200

(i.e., 10×20) total profit is Rs. $100 \times 20 =$ Rs. 2000

11. A and B enter into partnership with Rs. 5000 and Rs. 4000 respectively. After $\frac{1}{6}$ th of the time. A contributes additional Rs. 2000. Four months after the start B withdraws $\frac{1}{4}$ th his capital, then C joins the business with a capital investment of Rs. 5000. At the end of the year the company's balance sheet shows a profit of Rs. 2804. Find the share of A in the profit.

(1) Rs. 1401 (2) Rs. 701

(3) Rs. 1420 (4) Rs. 820

Ans : 1

Computing in terms of 1 month

A's investment = $(5000 \times 12) +$
 $(2000 \times 10) =$ Rs. 80000

B's investment = $(4000 \times 4) +$
 $(3000 \times 8) =$ Rs. 40000

C's investment = $5000 \times 8 =$
Rs. 40000

A : B : C = 80000 : 40000 :
40000

Now, $\frac{2804}{2+1+1} = 701$

A's share = $701 \times 2 =$ Rs. 1402

12. A and B enter into partnership and invest in stock market trading. Their investments initially were Rs. 50000 and Rs. 45000. After 4 months A withdraws half his capital. At the end of 8 months B withdraws half his capital and C joins them with a capital of

Rs. 70000. What should be the ratio in which the profit will be divided at the year-end?

- (1) 40 : 35 : 21
 (2) 40 : 45 : 28
 (3) 40 : 28 : 21
 (4) None of these

Ans : 2

Investment ratio in terms of 1 month or of their equivalent capitals.

A : B : C

$$= \left\{ (50000 \times 4) + \left(\frac{50000}{2} \times 8 \right) \right\}$$

$$\left\{ (45000 \times 8) + \left(\frac{45000}{2} \times 4 \right) \right\}$$

$$: (70000 \times 4)$$

$$= 400,000 : 450,000 : 280,000$$

$$= 40 : 45 : 28$$

The profit will be distributed in the above ratio i.e., 40 : 45 : 28.

- 13.** A, B and C together hold a pasture for which they pay a rent at the rate of Rs. 160 per month. They put on it 70.50 and 40 cows respectively. A sells $\frac{2}{7}$ th of his stock to B after 4 months and further 3 months later C sells $\frac{2}{5}$ th of his stock to A. How much of the rent should A pay in one year?

- (1) Rs. 500 (2) Rs. 400
 (3) Rs. 760 (4) Rs. 560

Ans : 3

Total rent to be paid for one year

$$= 160 \times 12 = \text{Rs. } 1920.$$

This is a case of compound partnership. So, the rent will be shared in proportion to the product of number of cows and time for each partner :

Computing in terms of 1 month,

For A :

$$(70 \times 4) + \left(70 - \frac{2}{7} \times 70 \right)$$

$$\times 3 + \left(70 - \frac{2}{7} \times 70 + \frac{2}{5} \times 40 \right) \times 5$$

$$= (70 \times 4) + (50 \times 3) + (66 \times 5)$$

$$= 280 + 150 + 330$$

$$\text{For A} = 760$$

For B :

$$\{50 \times 4\} + \left\{ 50 + \frac{2}{7} \times 70 \right\} \times 8$$

$$= 200 + 560$$

$$\text{For B} = 760$$

For C

$$\{40 \times 7\} + \left\{ 40 - \frac{2}{5} \times 40 \right\} \times 5$$

$$= 280 + 120$$

$$\text{For C} = 400$$

$$\text{So, A : B : C} = 760 : 760 : 400$$

$$= 19 : 19 : 10$$

$$\frac{1920}{19+19+10} = \frac{1920}{48} = 40$$

Rents to be paid.

$$\text{by A} = 19 \times 40 = \text{Rs. } 760$$

- 14.** Ram and Shyam enter into a partnership by contributing capitals in the ratio 16 : 7. After 5 months Ram withdraws. If finally they share profit in the ratio of 5 : 7, find how long Shyam's capital was used?

- (1) 15 months (2) 14 months
 (3) 12 months (4) 16 months

Ans : 4

Let us assume that Shyam's capital was used for x months. Then we can write the ratio of their equivalent capital investment as

$$\text{Ram : Shyam} = \frac{16 \times 5}{7 \times x} = \frac{5}{7}$$

$$\text{or, } x = 16$$

So, Shyam's capital was used for 16 months.

- 15.** A, B and C enter into a partnership and invest their capital in the ratio 4 : 8 : 9. Their period of investment are in the ratio 6 : 3 : 5. In what ratio would they distribute their profits?

- (1) 4 : 4 : 15 (2) 8 : 8 : 15
 (3) 3 : 3 : 10 (4) 3 : 10 : 15

Ans : 2

Ratio of profits = Ratio of product of investment and time period.

Ratio of share of profits

$$\text{A : B : C} = (4 \times 6) : \dots$$

$$(8 \times 3) : (9 \times 5)$$

$$= 24 : 24 : 45$$

$$A : B : C = 8 : 8 : 15$$

16. A, B and C enter into a partnership. Their capital contribution is in the ratio 21 : 18 : 14. At the end of business term they share profits in the ratio 15 : 8 : 9. Find the ratio of time for which they invest their capitals.

(1) 37 : 38 : 72

(2) 39 : 38 : 72

(3) 90 : 56 : 81

(4) None of these

Ans : 3

Ratio of profits = Ratio of capital multiplied by time.

\therefore Ratio of time = Ratio of profits divided by respective capitals.

$$= \frac{15}{21} : \frac{8}{18} : \frac{9}{14}$$

$$= \frac{5}{7} : \frac{4}{9} : \frac{9}{14} = \frac{90}{126}$$

$$: \frac{56}{126} : \frac{81}{126}$$

[126 is LCM of 7, 9 and 14]

$$A : B : C = 90 : 56 : 81.$$

17. A, B and C enter into a partnership. Their contributions are Rs. 30 lakhs, Rs. 20 lakhs, and Rs. 10 lakhs respectively. A and B are working partner while C is a sleeping partner. A and B get 10% and 15% of gross profit respectively as salary for

managing the business. If at the year end C receives Rs. 3.75 lakhs, as profit, find the share of A.

(1) Rs. 16 Lakhs

(2) Rs. 12 Lakhs

(3) Rs. 18 Lakhs

(4) Rs. 20 Lakhs

Ans : 3

Let the gross profit be x

$$A's \text{ salary} = \frac{10}{100}x = 0.10x$$

$$B's \text{ salary} = 0.15x$$

$$\begin{aligned} \text{Net profit} &= x - (0.10x + 0.15x) \\ &= 0.75x \end{aligned}$$

The net profit will be shared among three partners in proportion to their capital contributions.

Ratio of capital contributions,

$$A : B : C = 30 : 20 : 10$$

$$A : B : C = 3 : 2 : 1$$

$$\begin{aligned} \text{Sum of the ratios} &= 3 + 2 + 1 \\ &= 6 \end{aligned}$$

C's Share in the net profit

$$= \frac{1}{6} \times 0.75x$$

$$\text{But } = \frac{0.75}{6}x = 3.75$$

$$\text{or, } x = 6 \times \frac{3.75}{0.75}$$

$$\text{or, } x = 30$$

So, Gross profit = x

$$= \text{Rs. } 30 \text{ lakhs}$$

Total share for A or B will be sum of their salary and share in the net profit.

A's share

$$= 0.10x + \frac{3}{6}x = 0.6x$$

$$= 0.6 \times 30$$

$$= \text{Rs. } 18 \text{ lakhs}$$