

Chapter 5- Admission of a Partner

Question 1

X, Y, and Z are partners sharing profits and losses in the ratio of 5 : 3: 2. They admit A into partnership and give him 1/5th share of profits. Find the new profit-sharing ratio.

Solution:

Old Ratio = X: Y: Z = 5:3:2

1/5 share of profit is provided to A

Let assume the profit share for all partners after the admission of A is 1

So, X, Y, and Z combined share after A's admission = 1 – A's share

$$= 1 - \frac{1}{5} = \frac{4}{5} \text{ (this is the combined share of X, Y, and Z)}$$

New Ratio = Old Ratio X (combined share of X, Y, and Z)

$$\text{A's share} = \frac{5}{10} \times \frac{4}{5} = \frac{20}{50}$$

$$\text{Bs share} = \frac{3}{10} \times \frac{4}{5} = \frac{12}{50}$$

$$\text{C's share} = \frac{2}{10} \times \frac{4}{5} = \frac{8}{50}$$

So, the profit sharing ratio between X, Y, Z, and A will be $\frac{20}{50} : \frac{12}{50} : \frac{8}{50} : \frac{1}{50}$ or 10 : 6: 4 :5 respectively

Question 2

Ravi and Mukesh are sharing profits in the ratio of 7 : 3. They admit Ashok for 3/7th share in the firm which he takes 2/7th from Ravi and 1/7th from Mukesh. Calculate the new profit-sharing ratio.

Solution:

The old ratio of Ravi and Mukesh is $\frac{7}{10} : \frac{3}{10}$ $\frac{3}{7}$ share of profit is admitted by Ashok

Ravi sacrifice $\frac{2}{7}$ in favour of Ashok

Mukesh sacrifice $\frac{1}{7}$ in favour of Ashok

New Ratio = Old Ratio – Sacrificing Ratio

$$\text{Ravi's Share} = \frac{7}{10} - \frac{2}{7} = \frac{29}{70}$$

$$\text{Mukesh's share} = \frac{3}{10} - \frac{1}{7} = \frac{11}{70}$$

So, the new profit sharing ratio between Ravi, Mukesh, and Ashok will be,

$$\text{Ravi } \frac{29}{70} : \text{Mukesh } \frac{11}{70} : \text{Ashok } \frac{3}{7} = \frac{29:11:3}{70} = 29:11:3$$

Question 3

A and B are partners sharing profits and losses in the proportion of 7 : 5. They agree to admit C, their manager, into partnership who is to get 1/6th share in the profits. He acquires this share as 1/24th from A and 1/8th from B. Calculate new profit-sharing ratio.

Solution:

The old ratio of A and B = 7:5

$\frac{1}{6}$ share of profit is admitted by C

A sacrifice $\frac{1}{24}$ in favour of C

B sacrifice $\frac{1}{8}$ in favour of C

New Ratio = Old Ratio – Sacrificing Ratio

$$\text{A's Share} = \frac{7}{12} - \frac{1}{24} = \frac{13}{24}$$

$$\text{B's share} = \frac{5}{12} - \frac{1}{8} = \frac{7}{24}$$

So, the new profit sharing ratio between A, B, and C will be = $\frac{13}{24} : \frac{7}{24} : \frac{1}{6} = \frac{13:7:4}{24} = 13:7:4$

Question 4

A, B and C were partners in a firm sharing profits in the ratio of 3 : 2 : 1. They admitted D as a new partner for $\frac{1}{8}$ th share in the profits, which he acquired $\frac{1}{16}$ th from B and $\frac{1}{16}$ th from C. Calculate the new profit-sharing ratio of A, B, C and D.

Solution:

The profit-sharing ratio of A, B, and C = 3:2:1

$$\text{Original share of A} = \frac{3}{6}$$

$$\text{D's share} = \frac{1}{8} \text{ (out of which } \frac{1}{6} \text{ is acquired from B and C each)}$$

$$\text{New share of B} = \frac{2}{6} - \frac{1}{16} = \frac{13}{48}$$

$$\text{New share of C} = \frac{1}{6} - \frac{1}{16} = \frac{5}{48}$$

$$\text{So, the new profit sharing ratio between A, B, C, and D is} = \frac{3}{6} : \frac{13}{48} : \frac{5}{48} : \frac{1}{8} = \frac{24:13:5:6}{48} = 24:13:5:6$$

Question 5

Bharati and Astha were partners sharing profits in the ratio of 3 : 2. They admitted Dinkar as a new partner for $\frac{1}{5}$ th share in the future profits of the firm which he got equally from Bharati and Astha. Calculate the new profit-sharing ratio of Bharati, Astha and Dinkar.

Solution:

The old ratio of Bharati and Astha = 3:2

$$\text{Dinkar share} = \frac{1}{5}$$

$$\text{Bharati sacrifices} = \frac{1}{5} \times \frac{1}{2} = \frac{1}{10}$$

$$\text{Astha sacrifices} = \frac{1}{5} \times \frac{1}{2} = \frac{1}{10}$$

$$\text{Bharati's New Share} = \frac{3}{5} - \frac{1}{10} = \frac{6-1}{10} = \frac{5}{10}$$

$$\text{Astha's New share} = \frac{2}{5} - \frac{1}{10} = \frac{4-1}{10} = \frac{3}{10}$$

$$\text{Dinkar's New share} = \frac{1}{5} \times \frac{2}{2} = \frac{2}{10}$$

$$\text{So, Bharati : Astha : Dinkar} = 5 : 3 : 2$$

Question 6

X and Y are partners in a firm sharing profits and losses in the ratio of 3 : 2. Z is admitted as a partner with $\frac{1}{4}$ share in profit. Z acquires his share from X and Y in the ratio of 2 : 1. Calculate new profit-sharing ratio.

Solution:

The old ratio of X and Y = 3:2

$\frac{1}{4}$ th share of profit is admitted by Z

Sacrificing ratio of X and Y is 2:1

$$\text{Z acquired share from X} = \frac{2}{3} \times \frac{1}{4} = \frac{2}{12}$$

$$\text{Z acquired share from Y} = \frac{1}{3} \times \frac{1}{4} = \frac{2}{12}$$

New Ratio = Old ratio – Sacrificing ratio

$$\text{X's New Share} = \frac{3}{5} - \frac{2}{12} = \frac{36-10}{60} = \frac{26}{60}$$

$$\text{Y's New share} = \frac{2}{5} - \frac{1}{2} = \frac{24-5}{60} = \frac{19}{60}$$

$$\text{Z's New share} = \frac{1}{4} \times \frac{15}{15} = \frac{15}{60}$$

So, X : Y : Z = 26 : 19 : 15

Question 7

R and S are partners sharing profits in the ratio of 5 : 3. T joins the firm as a new partner. R gives $\frac{1}{4}$ th of his share and S gives $\frac{1}{5}$ th of his share to the new partner. Find out new profit-sharing ratio.

Solution:

The old ratio of R and S = 5 : 3

Sacrificing ratio = Old Ratio X Surrender Ratio

$$\text{Sacrificing ratio of R and} = \frac{5}{8} \times \frac{1}{4} = \frac{5}{32}$$

$$\text{Sacrificing ratio of S and} = \frac{3}{8} \times \frac{1}{5} = \frac{3}{40}$$

New Ratio = Old Ratio – Sacrificing Ratio

$$\text{R's New Share} = \frac{5}{8} - \frac{5}{32} = \frac{15}{32}$$

$$\text{S's New share} = \frac{3}{8} - \frac{3}{40} = \frac{15}{32}$$

T's Share = R's sacrifice + S's sacrifice

$$\text{T's Share} = \frac{5}{32} + \frac{3}{40} = \frac{25+12}{160} = \frac{37}{160}$$

New profit sharing ratio between R, S, and T = $\frac{15}{32} : \frac{15}{32} : \frac{37}{160} = \frac{75:48:37}{160}$ or 75 : 48 : 37

Question 8

Kabir and Farid are partners in a firm sharing profits and losses in the ratio of 7 : 3. Kabir surrenders $\frac{2}{10}$ th from his share and Farid surrenders $\frac{1}{10}$ th from his share in favour of Jyoti; the new partner. Calculate new profit-sharing ratio and sacrificing ratio.

Solution:

The old ratio of Kabir : Farid = 7:5

Kabir sacrifice $\frac{2}{10}$ in favour of Jyoti

Farid sacrifice $\frac{1}{10}$ in favour of Jyoti

$$\text{Jyoti's share} = \frac{2}{10} + \frac{1}{10} = \frac{3}{10}$$

New Ratio = Old Ratio – Sacrificing Ratio

$$\text{Kabir's New Share} = \frac{7}{10} - \frac{2}{10} = \frac{5}{10}$$

$$\text{Farid's New share} = \frac{3}{10} - \frac{1}{10} = \frac{2}{10}$$

So, the new profit sharing ratio between Kabir, Farid, and Jyoti will be = 5 : 2 : 3

The Sacrificing ratio of Kabir and Farid is $\frac{2}{10}$ and $\frac{1}{10} = 2:1$

Question 9

Find New Profit-sharing Ratio:

(i) R and T are partners in a firm sharing profits in the ratio of 3 : 2. S joins the firm. R surrenders $\frac{1}{4}$ th of his share and T $\frac{1}{5}$ th of his share in favour of S.

(ii) A and B are partners. They admit C for $\frac{1}{4}$ th share. In the future, the ratio between A and B would be 2 : 1.

(iii) A and B are partners sharing profits and losses in the ratio of 3 : 2. They admit C for $\frac{1}{5}$ th share in the profit. C acquires $\frac{1}{5}$ th of his share from A and $\frac{4}{5}$ th share from B.

(iv) X, Y and Z are partners in the ratio of 3 : 2 : 1. W joins the firm as a new partner for $\frac{1}{6}$ th share in profits. Z would retain his original share.

(v) A and B are equal partners. They admit C and D as partners with $\frac{1}{5}$ th and $\frac{1}{6}$ th share respectively.

(vi) A and B are partners sharing profits/losses in the ratio of 3 : 2 . C is admitted for $\frac{1}{4}$ th share. A and B decide to share equally in future.

Solution:

(i) The old ratio of R : T = 7:5

Sacrificing ratio = Old ratio X Surrender ratio

$$\text{R's Sacrificing Share} = \frac{3}{5} \times \frac{1}{4} = \frac{3}{20}$$

$$\text{T's Sacrificing Share} = \frac{2}{5} \times \frac{1}{5} = \frac{2}{25}$$

New Ratio = Old Ratio – Sacrificing Ratio

$$\text{R's New Share} = \frac{3}{5} - \frac{3}{20} = \frac{9}{20}$$

$$\text{T's New share} = \frac{2}{5} - \frac{2}{25} = \frac{8}{25}$$

S's share = R's sacrificing share + T's sacrificing share

$$= \frac{3}{20} + \frac{2}{25} = \frac{23}{100}$$

So, the new profit sharing ratio between R, T, and S will be = $\frac{9}{20} : \frac{8}{25} : \frac{23}{100} = \frac{45:32:23}{100}$ or 45: 32 : 23

(ii) The old ratio of A : B = 1 : 1

$\frac{1}{4}$ th profit share is admitted by C

$$\text{Combined share of A and B} = 1 - \text{C's share} = 1 - \frac{1}{4} = \frac{3}{4}$$

$$\text{New ratio} = \text{Combined share of A and B} \times \frac{2}{3}$$

$$\text{A's New Share} = \frac{3}{4} \times \frac{2}{3} = \frac{6}{12}$$

$$\text{B's New share} = \frac{3}{4} \times \frac{1}{3} = \frac{3}{12}$$

$$\text{New Profit sharing ratio A : B : C} = \frac{6}{12} : \frac{3}{12} : \frac{1}{4} = \frac{6:3:3}{100} = 2 : 1 : 1$$

(iii) The old ratio of A : B = 3 : 2

$\frac{1}{5}$ th profit share is admitted by C

$$A's \text{ sacrifice} = C's \text{ share} \times \frac{1}{5}$$

$$= \frac{1}{5} \times \frac{1}{5} = \frac{1}{25}$$

$$B's \text{ sacrifices} = C's \text{ share} \times \frac{4}{5}$$

$$= \frac{1}{5} \times \frac{4}{5} = \frac{4}{25}$$

New Ratio = Old Ratio – Sacrificing Ratio

$$A's \text{ share} = \frac{3}{5} - \frac{1}{25} = \frac{15-1}{25} = \frac{14}{25}$$

$$B's \text{ share} = \frac{2}{5} - \frac{4}{25} = \frac{10-4}{25} = \frac{6}{25}$$

$$\text{New Profit Sharing Ratio} = A : B : C = \frac{14}{25} : \frac{6}{25} : \frac{1}{5} = \frac{14:6:1}{25} = 14 : 6 : 1$$

(iv) The old ratio of X : Y : Z = 3 : 2 : 1

$\frac{1}{6}$ th profit share is admitted by W

After admitting W and combining all the partner's share, let the share be = 1

X and Y combined share in the new firm = 1 – Z's share – W's share

$$= 1 - \frac{1}{6} - \frac{1}{6} = \frac{4}{6}$$

New Ratio = Old Ratio X combined share of X and Y

$$X's \text{ share} = \frac{3}{5} \times \frac{4}{6} = \frac{12}{30}$$

$$Y's \text{ share} = \frac{2}{5} \times \frac{4}{6} = \frac{8}{30}$$

$$\text{New Profit Sharing Ratio} = X : Y : Z : W = \frac{12}{30} : \frac{8}{30} : \frac{1}{6} : \frac{1}{6} = \frac{12:8:5:5}{30} \text{ or } 12 : 8 : 5 : 5$$

(v) The old ratio of A : B = 1:1

$\frac{1}{5}$ th profit share is admitted by C

$\frac{1}{6}$ th profit share is admitted by D

After admitting C and D and combining all the partner's share, let the share be = 1

Combined share of profit of A and B after C and D's admission = 1 – C's share – D's share

A and B combined share after C and D's admission = 1 – Z's share – W's share

$$= 1 - \frac{1}{5} - \frac{1}{6} = \frac{19}{30}$$

New Ratio = Old Ratio X combined share of A and B

$$\text{A's share} = \frac{1}{2} \times \frac{19}{30} = \frac{19}{60}$$

$$\text{B's share} = \frac{1}{2} \times \frac{19}{30} = \frac{19}{60}$$

$$\text{New Profit Sharing Ratio} = \text{A} : \text{B} : \text{C} : \text{D} = \frac{19}{60} : \frac{19}{60} : \frac{1}{5} : \frac{1}{6} = \frac{19:19:12:10}{60} \text{ or } 19 : 19 : 12 : 10$$

(vi) The old ratio of A : B = 3 : 2

$\frac{1}{4}$ th profit share is admitted by C

After admitting C and combining all the partner's share, let the share be = 1

Combined share of profit of A and B after D's admission = 1 – C's share

$$= 1 - \frac{1}{4} = \frac{3}{4}$$

A and B New Ratio = combined share of A and B X $\frac{1}{2}$

$$\text{A and B New Ratio} = \frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$$

$$\text{New Profit Sharing Ratio} = \text{A} : \text{B} : \text{C} = \frac{3}{8} : \frac{3}{8} : \frac{1}{4} = \frac{3:3:2}{8} \text{ or } 3 : 3 : 2$$

Question 10

X and Y were partners sharing profits in the ratio of 3 : 2. They admitted P and Q as new partners. X surrendered $\frac{1}{3}$ rd of his share in favour of P and Y surrendered $\frac{1}{4}$ th of his share in favour of Q. Calculate new profit-sharing ratio of X, Y, P and Q.

Solution:

The old ratio of X : Y = 3 : 2

Sacrificing ratio = Old ratio X Surrender ratio

$$\text{X's Sacrificing Share} = \frac{3}{5} \times \frac{1}{3} = \frac{3}{15}$$

$$\text{Y's Sacrificing Share} = \frac{2}{5} \times \frac{1}{4} = \frac{2}{20}$$

New Ratio = Old Ratio – Sacrificing Ratio

$$\text{X's share} = \frac{3}{5} - \frac{3}{15} = \frac{6}{15}$$

$$\text{Y's share} = \frac{2}{5} - \frac{2}{20} = \frac{6}{20}$$

$$\text{X sacrificed for P} = \frac{3}{15}$$

$$\text{Y sacrificed for Q} = \frac{2}{10}$$

So, the profit sharing ratio between X, Y, P, and Q will be $\frac{6}{15} : \frac{6}{20} : \frac{3}{15} : \frac{2}{10} = \frac{24:8:12:6}{60}$ or 10 : 6 : 4 : 5 respectively

Question 11

Rakesh and Suresh are sharing profits in the ratio of 4 : 3. Zaheer joins and the new ratio among Rakesh, Suresh and Zaheer is 7 : 4 : 3. Find out the sacrificing ratio.

Solution:

The old ratio of Rakesh : Suresh = 4 : 3

New ratio for Rakesh, Suresh and Zaheer = 7 : 4 : 3

Sacrificing ratio = Old ratio – New ratio

$$\text{Rakesh's Share} = \frac{4}{7} - \frac{7}{14} = \frac{1}{14}$$

$$\text{Suresh's Share} = \frac{3}{7} - \frac{4}{14} = \frac{2}{14}$$

$$\text{So, sacrificing ratio of Rakesh and Suresh} = \frac{1}{14} : \frac{2}{14} = 1 : 2$$

Question 12

A and B are partners sharing profits in the ratio of 3 : 2. C is admitted as a partner. The new profit-sharing ratio among A, B and C is 4 : 3 : 2. Find out the sacrificing ratio.

Solution:

The old ratio A : B = 3 : 2

New ratio for A, B and C = 4 : 3 : 2

Sacrificing ratio = Old ratio – New ratio

$$A's \text{ Share} = \frac{3}{5} - \frac{4}{9} = \frac{7}{45}$$

$$B's \text{ Share} = \frac{2}{5} - \frac{3}{9} = \frac{3}{45}$$

$$\text{So, sacrificing ratio of A and B} = \frac{7}{45} : \frac{3}{45} = 1 : 2$$

Question 13

A, B and C are partners sharing profits in the ratio of 4 : 3 : 2. D is admitted for 1/3rd share in future profits. What is the sacrificing ratio?

Solution:

$$\text{Old Ratio} = A : B : C = 4 : 3 : 2$$

1/3th profit share is admitted by D

Let A, B, C, and D combined share be 1

So, A, B, and C combined share after D's admission = 1 – D's share

$$= 1 - \frac{1}{3} = \frac{2}{3}$$

New Ratio = Old Ratio X (combined share of A, B, and C)

$$A's \text{ share} = \frac{4}{9} \times \frac{2}{3} = \frac{8}{27}$$

$$B's \text{ share} = \frac{3}{9} \times \frac{2}{3} = \frac{6}{27}$$

$$C's \text{ share} = \frac{2}{9} \times \frac{2}{3} = \frac{4}{27}$$

Sacrificing ratio = Old ratio – New ratio

$$A's \text{ share} = \frac{4}{9} - \frac{8}{27} = \frac{4}{27}$$

$$B's \text{ share} = \frac{3}{9} - \frac{6}{27} = \frac{3}{27}$$

$$C's \text{ share} = \frac{2}{9} - \frac{4}{27} = \frac{2}{27}$$

So, sacrificing ratio of A : B : C will be $\frac{4}{27} : \frac{3}{27} : \frac{2}{27}$ or 4 : 3 : 2

Question 14

A, B, C and D are in partnership sharing profits and losses in the ratio of 36 : 24 : 20 : 20 respectively. E joins the partnership for 20% share and A, B, C and D in future would share profits among themselves as 3/10 : 4/10 : 2/10 : 1/10. Calculate new profit-sharing ratio after E's admission .

Solution:

$$\text{Old Ratio} = A : B : C : D = 36 : 24 : 20 : 20$$

20/100th profit share is admitted by E

Let A, B, C, and D combined share be 1

So, A, B, C, and D combined share after E's admission = 1 – E's share

$$= 1 - \frac{20}{100} = \frac{80}{100}$$

New Ratio = Combined share of A, B, C, and D X Agreed share of A, B, C, and D

$$\text{A's share} = \frac{80}{100} \times \frac{3}{10} = \frac{24}{100}$$

$$\text{B's share} = \frac{80}{100} \times \frac{4}{10} = \frac{32}{100}$$

$$\text{C's share} = \frac{80}{100} \times \frac{2}{10} = \frac{16}{100}$$

$$\text{D's share} = \frac{80}{100} \times \frac{1}{10} = \frac{8}{100}$$

$$\text{New sacrificing ratio of A : B : C : D : E} = \frac{24}{100} : \frac{32}{100} : \frac{16}{100} : \frac{8}{100} : \frac{20}{100} = 6 : 8 : 4 : 2 : 5$$

Question 15

X and Y are partners sharing profits and losses in the ratio of 3 : 2. They admit Z into partnership. X gives 1/3rd of his share while Y gives 1/10th from his share to Z. Calculate new profit-sharing ratio and sacrificing ratio.

Solution:

$$\text{Old Ratio} = X : Y = 3 : 2$$

$$\text{Old Ratio} = X : Y = 3 : 2$$

$$\text{X's sacrificing share} = \frac{1}{3} \times \frac{3}{5} = \frac{3}{15}$$

$$\text{Y's sacrificing share} = \frac{1}{10}$$

$$\text{Sacrificing ratio} = \frac{3}{15} : \frac{1}{10} \text{ or } 2 : 1$$

$$\text{New share} = \text{Old Share} - \text{Sacrificed Share}$$

$$\text{X's share} = \frac{3}{5} - \frac{3}{15} = \frac{6}{15}$$

$$\text{Y's share} = \frac{2}{5} - \frac{1}{10} = \frac{3}{10}$$

$$\text{Z's share} = \frac{3}{15} - \frac{1}{10} = \frac{9}{30}$$

$$\text{New Ratio} = \frac{6}{15} : \frac{3}{10} : \frac{9}{30} = 4 : 3 : 3$$

Question 16

A, B and C are partners sharing profits in the ratio of 2 : 2 : 1. D is admitted as a new partner for 1/6th share. C will retain his original share. Calculate the new profit-sharing ratio and sacrificing ratio.

Solution:

New Profit Sharing Ratio Evaluation

$$\text{Old Ratio} = A : B : C = 2 : 2 : 1$$

E admitted $\frac{1}{6}$ th share and C retained his share $\frac{1}{5}$

$$\text{Remaining Share} = 1 - \frac{1}{6} - \frac{1}{5} = \frac{30-5-6}{30} = \frac{19}{30}$$

A and B will share the other ratio in 2 : 2 old ratio

$$\text{A's new share} = \frac{19}{30} \times \frac{2}{4} = \frac{38}{120}$$

$$\text{B's new share} = \frac{19}{30} \times \frac{2}{4} = \frac{28}{120}$$

$$\text{C's new share} = \frac{1}{5} \times \frac{24}{24} = \frac{24}{120}$$

$$\text{D's new share} = \frac{1}{6} \times \frac{20}{20} = \frac{20}{120}$$

Since, the sacrificed ratio is not mentioned it is assumed that A and B sacrificed their share in their old ratio

Sacrificing ratio = Old ratio – New ratio

$$\text{A's share} = \frac{2}{5} - \frac{19}{60} = \frac{24-19}{60} = \frac{5}{60}$$

$$\text{B's share} = \frac{2}{5} - \frac{19}{60} = \frac{24-19}{60} = \frac{5}{60}$$

So, sacrificing ratio of A : B : C is 5 : 5 or 1 : 1

Question 17

A and B are in partnership sharing profits and losses as 3 : 2. C is admitted for $\frac{1}{4}$ th share. Afterwards D enters for 20 paise in the rupee. Compute profit-sharing ratio of A, B, C and D after D's admission.

Solution:

Old Ratio = A : B = 3 : 2

C admitted $\frac{1}{6}$ th profit share

Let A, B, C, and D combined share be 1

So, A, B, C, and D combined share after E's admission = 1 – E's share

$$= 1 - \frac{1}{4} = \frac{3}{4}$$

New Ratio = Old ratio X combined share of A and B

$$A's \text{ share} = \frac{3}{5} \times \frac{3}{4} = \frac{9}{20}$$

$$B's \text{ share} = \frac{2}{5} \times \frac{3}{4} = \frac{6}{20}$$

$$\text{New profit sharing ratio after admission of C} = A : B : C = \frac{9}{20} : \frac{6}{20} : \frac{1}{4} = \frac{9:6:5}{20} \text{ or } 9 : 6 : 5$$

After C's admission the profit sharing ratio will become old ratio when determining the new profit ratio after D's admission

$$\text{Ratio before admission of D} = A : B : C = 9 : 6 : 5$$

$$D \text{ admitted } \frac{20}{100} \text{ th profit share}$$

Let combined share of A, B, and C, after D's admission be 1

So, A, B, and C combined share after D's admission = 1 - D's share

$$= 1 - \frac{20}{100} = \frac{80}{100}$$

New Ratio = Old ratio X combined share of A, B, and C

$$A's \text{ share} = \frac{9}{20} \times \frac{80}{100} = \frac{72}{200}$$

$$B's \text{ share} = \frac{6}{20} \times \frac{80}{100} = \frac{48}{200}$$

$$C's \text{ share} = \frac{5}{20} \times \frac{80}{100} = \frac{40}{200}$$

$$\text{So, new profit sharing ratio between A : B : C : D will be } \frac{72}{200} : \frac{48}{200} : \frac{40}{200} : \frac{20}{100} = 9 : 6 : 5 : 5$$

Question 18

P and Q are partners sharing profits in the ratio of 3 : 2. They admit R into partnership who acquires $\frac{1}{5}$ th of his share from P and $\frac{4}{25}$ th share from Q. Calculate New Profit-sharing Ratio and Sacrificing Ratio.

Solution:

$$\text{Old Ratio P : Q} = 3 : 2$$

$$\frac{1}{5} \text{ of P's share is acquired by R}$$

$$\text{Remaining share of P} = \frac{4}{5} (1 - \frac{1}{5}) \text{ of his share from Q}$$

$$\text{If R share } \frac{4}{5} = \frac{1}{25}$$

$$P's \text{ share} = \frac{1}{5} \times \frac{1}{5} = \frac{1}{25}$$

$$Q's \text{ share} = \frac{4}{25}$$

$$P's \text{ new share} = \frac{3}{5} - \frac{1}{25} = \frac{15-1}{25} = \frac{14}{25}$$

$$Q's \text{ new share} = \frac{2}{5} - \frac{4}{25} = \frac{10-4}{25} = \frac{6}{25}$$

$$R's \text{ new share} = \frac{1}{5} \times \frac{5}{5} = \frac{5}{25}$$

$$\text{New Share P : Q : R} = 14 : 6 : 5$$

$$\text{Sacrificing ratio} = 1 : 4$$

Question 19

A and B are partners sharing profits and losses in the ratio of 2 : 1. They take C as a partner for 1/5th share. Goodwill Account appears in the books at ₹ 15,000. For the purpose of C's admission, goodwill of the firm is valued at ₹ 15,000. C is to pay a proportionate amount as premium for goodwill which he pays to A and B privately.

Pass necessary entries.

Solution:

Journal Entry					
Date	Particulars		L.F.	Debit ₹	Credit ₹
	A's Capital A/c	Dr.		10,000	
	B's Capital A/c	Dr.		5,000	
	To Goodwill A/c				15,000
	(Goodwill written-off between A and B in the old ratio of 2:1)				

Note- The goodwill brought by C will not be recorded in the journal books as the amount is paid privately to A and B.

Working Note: Goodwill Written-off Evaluation

Debited A's capital = $15,000 \times \frac{2}{3} = ₹ 10,000$

Credited B's capital = $15,000 \times \frac{1}{3} = ₹ 5,000$

Question 20

A and B are partners sharing profits and losses in the ratio of 2 : 5. They admit C on the condition that he will bring ₹ 14,000 as his share of goodwill to be distributed between A and B. C's share in the future profits or losses will be 1/4th. What will be the new profit-sharing ratio and what amount of goodwill brought in by C will be received by A and B?

Solution:

Old ratio A : B = 2 : 5

C admitted 1/4th profit share

Let A, B, and C combined share be 1

A and B combined share after C's admission = $1 - \text{C's share}$

$$1 - \frac{1}{4} = \frac{3}{4}$$

New ratio = Old ratio X combined share of A and B

$$A's \text{ share} = \frac{2}{7} \times \frac{3}{4} = \frac{6}{28}$$

$$B's \text{ share} = \frac{5}{7} \times \frac{3}{4} = \frac{15}{28}$$

$$\text{New Profit Sharing Ratio} = A : B : C = \frac{6}{28} : \frac{15}{28} : \frac{1}{4} = \frac{6:15:7}{28} = 6 : 15 : 7$$

C's Goodwill share distribution

C's goodwill share = ₹ 14,000

$$A \text{ will receive} = 14,000 \times \frac{2}{7} = ₹ 4,000$$

$$B \text{ will receive} = 14,000 \times \frac{5}{7} = ₹ 10,000$$

Question 21

A and B are partners in a firm sharing profits and losses in the ratio of 3 : 2. A new partner C is admitted. A surrenders 1/5th of his share and B surrenders 2/5th of his share and B surrenders 2/5th of his share in favour of C. For the purpose of C's admission, goodwill of the firm is valued at ₹ 75,000 and C brings in his share of goodwill in cash which is retained in the firm's books. Journalise the above transactions.

Solution:

Date	Particulars	L.F.	Debit ₹	Credit ₹
	Cash A/c	Dr.	21,000	
	To Premium for Goodwill A/c			21,000
	(Premium Goodwill brought by C)			
	Premium for Goodwill A/c	Dr.	21,000	
	To A's Capital A/c			9,000
	To B's Capital A/c			12,000
	(Distributed Goodwill Premium brought by C between A and B in sacrificing ratio 3:4)			

Old ratio A : B = 3 : 2

$$A \text{ sacrifices} = \frac{3}{5} \times \frac{1}{5} = \frac{3}{25}$$

$$B \text{ sacrifices} = \frac{2}{5} \times \frac{2}{5} = \frac{4}{25}$$

$$\text{Sacrificing ratio of A : B} = \frac{3}{25} : \frac{4}{25} = 3 : 4$$

New ratio – Old ratio – Sacrificing ratio

$$A's \text{ new ratio share} = \frac{3}{5} - \frac{3}{25} = \frac{12}{25}$$

$$B's \text{ new ratio share} = \frac{2}{5} - \frac{4}{25} = \frac{6}{25}$$

$$C's \text{ new ratio share} = A \text{ sacrifice} + B \text{ sacrifice} = \frac{3}{25} + \frac{4}{25} = \frac{7}{25}$$

So, New ratio A : B : C = 12 : 6 : 7

$$\text{Goodwill premium bought by C} = 75,000 \times \frac{7}{25} = 21,000$$

Goodwill premium distribution

$$\text{Goodwill of A} = 21,000 \times \frac{3}{7} = 9,000$$

$$\text{Goodwill of B} = 21,000 \times \frac{4}{7} = 12,000$$

Question 22

Give Journal entries to record the following arrangements in the books of the firm:

(a) *B* and *C* are partners sharing profits in the ratio of 3 : 2. *D* is admitted paying a premium (goodwill) of ₹ 2,000 for 1/4th share of the profits, shares of *B* and *C* remain as before.

(b) *B* and *C* are partners sharing profits in the ratio of 3 : 2. *D* is admitted paying a premium of ₹ 2,100 for 1/4th share of profits which he acquires 1/6th from *B* and 1/12th from *C*.

Solution:

(a)

Journal				
Date	Particulars	L.F.	Debit ₹	Credit ₹
	Cash A/c	Dr.	2,000	
	To Premium for Goodwill A/c			2,000
	(Goodwill Premium brought by D)			
	Premium for Goodwill A/c	Dr.	2,000	
	To B's Capital A/c			1,200
	To C's Capital A/c			800
	(Distributed Goodwill Premium between B and			

	C in sacrificing ratio 3:2)				
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Working Note: Distribution of goodwill premium

Goodwill of B = $2,000 \times \frac{3}{5} = 1,200$

Goodwill of C = $2,000 \times \frac{2}{5} = 800$

(b)

Journal				
Date	Particulars	L.F.	Debit ₹	Credit ₹
	Cash A/c	Dr.	2,100	
	To Premium for Goodwill A/c			2,100
	(Goodwill share bought by D in cash)			
	Premium for Goodwill A/c	Dr.	2,100	
	To B's Capital A/c			1,400
	To C's Capital A/c			700
	(Distributed Goodwill Premium between B and C in sacrificing Ratio 2:1)			

Working Note 1 : Distribution of goodwill premium

Sacrificing ratio = B : C = $\frac{1}{6} : \frac{1}{12} = 2 : 1$

Working Note 2 : Distribution of goodwill premium

Goodwill of B = $2,100 \times \frac{2}{3} = 1,400$

Goodwill of C = $2,100 \times \frac{1}{3} = 700$

Question 23

B and C are in partnership sharing profits and losses as 3 : 1. They admitted D into the firm, D pays premium of ₹ 15,000 for 1/3rd share of the profits. As between themselves, B and C agree to share future profits and losses equally. Draft Journal entries showing appropriations of the premium money.

Solution:

Journal				
Date	Particulars	L.F.	Debit ₹	Credit ₹
	Cash A/c	Dr.	15,000	
	To Premium for Goodwill A/c			15,000

	(Goodwill share bought by D in cash)				
	Premium for Goodwill A/c	Dr.		15,000	
	To B's Capital A/c				15,000
	(Goodwill premium transferred to B's Capital)				
	C's Capital A/c	Dr.		3,750	
	To B's Capital A/c				3,750
	(Being charges goodwill from C's capital A/c due to his gain in profit sharing)				

Working Notes 1: Sacrificing Ratio Evaluation

Let B and C combined share after D's be 1

B and C combined share after D's admission = 1 – D's share

$$1 - \frac{1}{3} = \frac{2}{3}$$

$$\text{Profit sharing of B and C after D's admission} = \frac{2}{3} \times \frac{1}{2} = \frac{1}{3} \text{ each}$$

Sacrificing ratio = New ratio – Old ratio

$$\text{B's share} = \frac{3}{4} - \frac{1}{3} = \frac{5}{12} \text{ (sacrificing)}$$

$$\text{C's share} = \frac{1}{4} - \frac{1}{3} = \frac{-1}{12} \text{ (gain)}$$

Working Notes 2:

C gains in the new firm. So, C's goodwill gain will be debited from his capital A/c and given to the sacrificing partner B.

Firm's goodwill = Goodwill premium brought by D X Reciprocal of D's share

$$= 15,000 \times \frac{3}{1} = ₹ 45,000$$

C's share of Goodwill gain = Firm goodwill X Share of gain

$$= 45,000 \times \frac{1}{12} = ₹ 3,750$$

Question 24

M and J are partners in a firm sharing profits in the ratio of 3 : 2. They admit R as a new partner. The new profit-sharing ratio between M, J and R will be 5 : 3 : 2. R brought in ₹ 25,000 for his share of premium for goodwill. Pass necessary Journal entries for the treatment of goodwill.

Solution:

Journal					
Date	Particulars		L.F.	Debit ₹	Credit ₹
	Cash A/c	Dr.		25,000	
	To Premium for Goodwill A/c				25,000
	(Goodwill share bought by C in cash)				
	Premium for Goodwill A/c	Dr.		25,000	
	To M's Capital A/c				12,500
	To J's Capital A/c				12,500
	(Distributed C's Goodwill share between M and J in their sacrificing ratio)				

Working Notes 1: Sacrificing Ratio Evaluation

Sacrificing ratio = Old ratio – New ratio

$$\text{M's sacrificing ratio} = \frac{3}{5} - \frac{5}{10} = \frac{1}{10}$$

$$\text{J's sacrificing ratio} = \frac{2}{5} - \frac{3}{10} = \frac{1}{10}$$

$$\text{Sacrificing ratio} = \text{M} : \text{J} = \frac{1}{10} : \frac{1}{10} = 1 : 1$$

Working Notes 2: R's goodwill share Evaluation

$$\text{M's goodwill share} = 25,000 \times \frac{1}{2} = ₹ 12,500$$

$$\text{J's goodwill share} = 25,000 \times \frac{1}{2} = ₹ 12,500$$

So, M and N will receive 12,500 each

Question 25

A and B are in partnership sharing profits and losses in the ratio of 5 : 3. C is admitted as a partner who pays ₹ 40,000 as capital and the necessary amount of goodwill which is valued at ₹ 60,000 for the firm. His share of profits will be 1/5th which he takes 1/10th from A and 1/10th from B.

Give Journal entries and also calculate future profit-sharing ratio of the partners.

Solution:

Journal					
Date	Particulars		L.F.	Debit ₹	Credit ₹
	Cash A/c	Dr.		52,000	
	To C's Capital A/c				40,000
	To Premium for Goodwill A/c				12,000
	(Being goodwill share and capital bought by C in cash)				
	Premium for Goodwill A/c	Dr.		12,000	
	To A's Capital A/c				6,000
	To B's Capital A/c				6,000
	(Being C's goodwill share distributed between A and B)				

Working Notes 1 : A and B Sacrificing Ratio

$$A : B = \frac{1}{10} : \frac{1}{10} = 1 : 1$$

Working Notes 2 : New Profit Sharing Ratio Evaluation

Old ratio of A : B = 5 : 3

New ratio = Old ratio – Sacrificing ratio

$$A's \text{ share} = \frac{5}{8} - \frac{1}{10} = \frac{21}{40}$$

$$B's \text{ share} = \frac{3}{8} - \frac{1}{10} = \frac{11}{40}$$

$$\text{New Profit Sharing Ratio} = A : B : C = \frac{21}{40} : \frac{11}{40} : \frac{1}{5} = \frac{21:11:8}{40}$$

Working Notes 3 : Distribution of R's goodwill share Evaluation

$$A's \text{ goodwill share} = 12,000 \times \frac{1}{2} = ₹ 6,000$$

$$B's \text{ goodwill share} = 12,000 \times \frac{1}{2} = ₹ 6,000$$

So, A and B will receive 6,000 each