Sub : Arithmetic   **PATERNERSHIP**   **Exam for : SSC / Banking**

1. At the beginning of a partnership business, the Capital of B was 3/2 times that of A. After 8 Months B withdrew ½ of his Capital and after 10 months A withdraw 1/4ᵗʰ of his Capital. At the end of the year, if the profit incurred as Rs. 53,000/- . Find the amount received by A in Rs. ?
(1) Rs.30,800/-   (2) Rs. 32,000/-
(3) Rs. 30,000/-   (4) Rs. 23,000/-

2. A, B and C started a business with theirinvestments in the ratio 1: 2: 4 . After 6 months, A increased his Capital by 50% and B invested twice the amount as before, while C withdrew ¼ of his own investment. The ratio of their profits at the end of the year was----
(1) 10: 5: 9   (2) 5: 12: 14
(3)   6: 9: 17   (4) 5 : 14: 16

3. A, B and C entered into a business and their investments ratio was 5: 4: 3. After 4 months B invested Rs. 1,000 more and after 8 months C invested Rs. 2,000 more. At the end of one year the profit ratio was 15: 14: 11, then the investment of C at the beginning was
(1) Rs. 3,000/-   (2) Rs. 4,500/-
(3). 6,000/-   (4) Rs. 7,500/-

4. A, B, C enter into a partnership with shares in the ratio 7/2: 4/3:6/5.After 4 months, A increases his share by 50% . If the total profit at the end of the year was Rs. 43,200/-, then the B's share in the profit as
(1) Rs. 4,200/-   (2) Rs. 7,200/-
(3) Rs. 4,800/-   (4) Rs.8,000/-

5. A invests Rs. 64,000/- in a business. After few months B joined him with Rs.48,000/-. At the end of year, the total profit was divided between them in the ratio 2 : 1. After how months did B join?
(1) 8   (2) 6   (3) 4   (4) 7

6. A sum of Rs. 7,000/- is divided among A, B, C in such a way that the share of A and B are in the ratio 2 : 3 and those of B and C are in the ratio 4 : 5 the share of B is
(1) Rs. 2,400/-   (2) Rs. 1,600/-
(3) Rs. 3,000/-   (4) Rs. 2,000/-

7. A, B and C enter into a partnership A invests 3 times as much as B invests and B invests two-third of what C invests. At the end of the year, the profit earned is Rs. 6,600/-. What is the share of B ?
(1) Rs. 1,200/- (2) Rs. 1,600/-   (3)Rs. 1,400/- (4) Rs.1,800/-

8. Four milkmen rented a pasture. A grazed 24 Cows for 3 months, B 10 Cows for 5 months, C 35 Cows for 4 months and D 21 Cows for 3 months. If A's share of rent is Rs. 720/-. Find the total rent of the field –
(1)Rs. 4,500/-   (2) Rs. 4,250/-   (3)Rs. 3,250/-   (4) Rs.4,255/-

9. In a Partnership, A invests 1/6 of the Capital for 1/6 of the time, B invests 1/3 of the Capital for 1/3 of the time and C, the rest of the Capital for the whole time.

Out of a profit of Rs. 4,600/-, B's share is:
(1) Rs. 650/-   (2) Rs. 960/-   (3) Rs. 800/-   (4) Rs. 1,000/-

10. A, B and C enter into a partnership and their shares are in the ratio 1/2 : 1/3 : 1/4. After 2 months, A withdraws half of his Capital and after 10 months, a profit of Rs. 318/- is divided among them. What is B's share ?
(1) Rs. 129/-   (2) Rs. 156/-   (3)Rs. 120/-   (4) Rs. 168/-

11. A and B entered into a partnership with Capitals on the ratio 4 : 5. After 3 months, A withdrew 1/4 of his Capital and B withdrew 1/5 of his Capital the gain at the end of 10 months was Rs. 760/-. A's share in his profit is :_____
(1)Rs. 330/-   (2) Rs. 380/-   (3) Rs. 360/-   (4) Rs. 430/-

12. A and B are Partners in a business. A contributes 1/4 of the Capital for 15 months and B received 2/3 of the profit. For how long B's money was used?
(1) 6 months   (2) 10 months   (3) 9 months   (4) 1 year

13. A and B invest in a business in the ratio of 3 : 2 . If 5% of the total profit goes to charity and A's share is Rs. 855/-, the total profit is:
(1) Rs. 1,425/- (2) Rs. 1,537.50 (3) Rs. 1,500/-   (4) Rs. 1,576

14. A and B start a business jointly.A invests Rs.16,000/ for 8 months and B remains in the business for 4 months. Out of total profit, B claims 2/7 of the profit. How much money was contributed by B ?
(1) Rs.10,500 (2) Rs. 12,800 (3) Rs.11,900/- (4) Rs.13,600/-

15. A started a business with Rs. 21,000/- and is joined afterwards by B with Rs. 36,000/-. After how many months did B join if the profits at the end of the year are divided equally ?
(1) 3   (2) 5   (3) 4   (4) 6

16. If 4 (A's Capital) = 6 (B's Capital) = 10(C's Capital), then out of a profit of 4650, C will receive,
(1) Rs. 465/- (2) Rs. 1,550/-   (3) Rs. 900/-   (4) Rs. 2,250/-

17. Three partners shared the profit in a business in the ratio 5 : 7 : 8. They had partnered for 14 months, 8 months and 7 months respectively. What was the ratio of their investments
(1) 38 : 28 : 21 (2) 30 : 49 : 64   (3) 5 : 7 : 8   (4) None of these

18. A started a business investing Rs . 80,000/-. After 3 months, B joined him investing Rs. 50,000/-. If at the end of the year, they make a profit of Rs. 23,500/ How much , more will be A's share than B's share than in that profit ?
(1) Rs. 7,500/- (2) Rs. 8,500/- (3) Rs. 16,000/- (4) Rs. 17,000/-

19. A, B and C are partners in a business. A invests Rs. 1,000/- for 8 months, B Rs. 1,500/- for 9 months and C, Rs. 1,800/- for 6 months. If the total profit is Rs. 1,615/- how much does B get
(1) Rs. 500/- (2) Rs. 325/-   (3) Rs. 675/- (4) Rs. 700/-

20. Rs. 8,400/- is divided among A, B, C and D in such a way that the shares of A and B, B and C, C and D are in the ratio of 2 : 3, 4 : 5 and 6 : 7 respectively. The share of A is ?
(1) Rs. 850/-   (2) Rs. 8,210/-
(3) Rs. 8,400/-   (4) None of these

SSC - Arthmetic Key Sheet

1	4	11	1
2	2	12	2
3	1	13	3
4	4	14	2
5	3	15	2
6	1	16	3
7	1	17	4
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Partnership
Explanation

(2) $A:B:C = 1:2:4$

$\quad = (1\times6)+(1.5\times6) : (2\times6)+(4\times6) : (4\times6)+(3\times6)$

$\quad = (6+9) : (12+24) : (24+18)$

$\quad = 15 : 36 : 42$

$A:B:C = 5 : 12 : 14$

$\qquad$ Ans : ②

④ $A:B:C = \dfrac{7}{2} : \dfrac{4}{3} : \dfrac{6}{5}$ $\qquad$ L.C.M = 30

$\quad = \dfrac{7}{2}\times30 : \dfrac{4}{3}\times30 : \dfrac{6}{5}\times30$

$\quad = 105 : 40 : 36$

$\quad = (105\times4)+(157.5\times8) : (40\times12) : (36\times12)$

$\quad = 1680 : 480 : 432$

$A:B:C = 35 : 10 : 9$

$35+10+9 = 54 \longrightarrow 43,200$

$\qquad B = 10 \longrightarrow ?$

$\qquad B = \dfrac{10}{54} \times \overset{800}{43,200}$

$\qquad B = 8000 \text{ Rs}.$

$\qquad$ Ans : ④

(5) $A:B = 64,000\times12 : (12-x)\,48,000$

Profit Ratio of $A:B = 2:1$

$64,000\times12 : (12-x)\,48,000 = 2:1$

$16 : (12-x) = 2:1$

$\dfrac{16}{12-x} = \dfrac{2}{1}$

$(12-x)\,2 = 16\times1$

$12-x = \dfrac{16}{2} = 8$

$12-x = 8$

$x = 12-8$

$x = 4 \text{ months}$

after 4 months

$\qquad$ ANS : ③

(6) $A:B = 2:3$

$\qquad B:C = 4:5$

$A:B:C = 8:12:15$

$8+12+15 = 35 \longrightarrow 7,000$

$\qquad B = 12 \longrightarrow ?$

$\qquad B = \dfrac{12}{35} \times \overset{200}{7000} = 2,400 \text{ Rs}$

$\qquad$ Ans : ①

(7) $A = 3B \Rightarrow A:B = 3:1$

$\quad B = \dfrac{2}{3}C \Rightarrow B:C = 2:3$

$\qquad A:B:C = 6:2:3$

$6+2+3 = 11 \longrightarrow 6,600$

$\qquad B = 2 \longrightarrow ?$

$\qquad B = \dfrac{2}{11} \times \overset{600}{6600} = 1200$

$\qquad B = 1200 \text{ Rs}$

$\qquad$ Ans : ①

(8)

$A:B:C:D = (24\times3) : (10\times5) : (35\times4) : (21\times3)$

$\quad = 72 : 50 : 140 : 63$

$72+50+140+63 = 325$

$A \to 72 \longrightarrow 720 \quad \dfrac{325}{72}\times\overset{10}{720} = 3250 \text{ Rs}.$

Total $= 325 \longrightarrow ?$

$\qquad$ Ans : ③

(9) Let Capital $= 1\text{Rs}.$ $\quad \dfrac{1}{3}$ of time $= \dfrac{1}{3}\times12 = 4$

$\quad$ Prime $= 12$ months

$\quad \dfrac{1}{6}$ of time $= \dfrac{1}{6}\times12 = 2$

$A+B+C =$

$\quad$ C invest $= 1-\left(\dfrac{1}{3}+\dfrac{1}{6}\right) = \dfrac{1}{2}$

$\quad$ C time $= 12$ months

$A:B:C = \left(\dfrac{1}{6}\times1\times2\right) : \left(\dfrac{1}{3}\times1\times4\right) : \left(\dfrac{1}{2}\times12\right)$

$\quad = \dfrac{1}{3} : \dfrac{4}{3} : 6 \qquad$ L.C.M = 3

$\quad = \dfrac{1}{3}\times3 : \dfrac{4}{3}\times3 : 6\times3$

$A:B:C = 1 : 4 : 18$

$1+4+18 = 23 \longrightarrow 4,600$

$\qquad B = 4 \longrightarrow ? \qquad$ ANS : ③

$\qquad B = \dfrac{4}{23} \times \overset{200}{4,600}$

$\qquad B = 800 \text{ Rs}.$

10. $A:B:C = \frac{1}{2} : \frac{1}{3} : \frac{1}{4}$ L.C.M = 12

$\quad = \frac{1}{2} \times 12 : \frac{1}{3} \times 12 : \frac{1}{4} \times 12$

$A:B:C = 6:4:3$

Profit ratio $= (6\times2) + (6\times8) : (4\times10) : (3\times10)$

$\quad = 12 + 24 : 40 : 30$

$\quad = 36 : 40 : 30$

$\quad = 18 : 20 : 15$

$18 + 20 + 15 = 53 \rightarrow 318$

$\quad B = 20 \rightarrow ?$

$\quad B = \frac{20}{53} \times 318^{6} = 120 Rs.$

Ans: ③

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11. $A:B = 4:5$

$\quad = (4\times3) + (3\times7) : (5\times3) + (4\times7)$

$\quad = 12 + 21 : 15 + 28$

$A:B \quad = 33 : 43$

$\quad 33 + 43 = 76 \rightarrow 760$

$\quad A = 33 \rightarrow ?$

$\quad A = \frac{33}{76} \times 760^{10} = 330 Rs.$

Ans: ①

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12. Investment ratio

$A:B = \frac{1}{4} : \frac{4-1}{4}$

$\quad = \frac{1}{4} : \frac{3}{4}$

$\quad = 1 : 3$

$\quad = 1\times5 : 3\times2$

$A:B \quad = 5 : x$

Profit ratio
$A:B \quad = \frac{3-2}{3} : \frac{2}{3}$

$A:B = 1:2$

$\quad 5 : x = 1:2$

$\quad \frac{5}{x} = \frac{1}{2}$

$\quad x = 5\times2$

$\quad x = 10 \text{ months}$

Ans ②

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(13) $A:B = 3:2$

$\quad A - 3 \rightarrow 855$

$\quad 3 + 2 = 5 \rightarrow ?$

$\quad \frac{5}{3} \times 855^{285} = 1425$

5% charity $\frac{95}{1425}$ $\frac{100}{95} \times 1425$ 1500 Rs

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14. Investment ratio

$A:B = 16,000 \times 8 : x \times 4^{2}$

$\theta:B = 32,000 : x$

Profit ratio

$A:B = \frac{7-2}{7} : \frac{2}{7}$

$A:B = 5:2$

$32,000 : x = 5:2$

$\frac{32,000}{x} = \frac{5}{2} \Rightarrow x = \frac{32,000 \times 2}{5}^{6400}$

$x = 12,800$

Ans: ②

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15. $A:B = 84,000 \times 12 : 36,000 \times (12-x)$
$\qquad\qquad 7 \qquad 1 \qquad 3$

$A:B = 7 : (12-x)$

Profit ratio

Let $A:B = 1:1$

$\frac{7}{12-x} = \frac{1}{1} \Rightarrow 12-x = 7$

$\qquad\qquad\qquad \Rightarrow x = 12-7$

$\qquad\qquad\qquad x = 5 \text{ months}$

Ans: ②

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16. $\frac{4A}{2} = \frac{6B}{3} = \frac{10C}{5}$

$2A = 3B = 5C$

$2A = 3B \Rightarrow A:B = 3:2$

$3B = 5C \Rightarrow B:C = 5:3$

$A:B:C = 15:10:6$

$15 + 10 + 6 = 31 \rightarrow 4650$

$C = 6 \rightarrow ?$

$C = \frac{6}{31} \times 4650^{150} = 900 Rs$

Ans: ③

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17. Let Investment ratio $= x:y:z$

Profit ratio $= 14x : 8y : 7z$

Given profit ratio $= 5:7:8$

$\therefore 14x : 8y : 7z = 5:7:8$

$\frac{14x}{8y} = \frac{5}{7} \Rightarrow \frac{x}{y} = \frac{5}{7} \times \frac{8}{14} = \frac{20}{49}$

$\Rightarrow x:y = 20:49$

$\frac{8y}{7z} = \frac{7}{8} \Rightarrow \frac{y}{z} = \frac{7}{8} x$

$\quad y:z = 49:64$

$\therefore x:y = 20:49$

$\quad y:z = 49:64$

$x:y:z = 980 : 2401 : 3136$ Ans ④

18. $A:B = 80,000 \times \underset{4}{12} : 50,000 \times \underset{3}{9}$

$\qquad = 32 : 15$

$\qquad 32+15 = 47 \longrightarrow 23,500$

$\qquad 32-15 = 17 \longrightarrow ?$

$\qquad \dfrac{17}{47} \times 2\overset{500}{3,500} = 8,500$

$\qquad$ Ans : ②

19. $A:B:C = 10,000 \times 8 : 1500 \times 9 : 1800 \times 6$

$\qquad = 10 \times 8 : 15 \times 9 : 18 \times 6$

$\qquad = 80 : 135 : 108$

$\qquad 80+135+108 = 323 \longrightarrow 1615$

$\qquad B = 135 \longrightarrow ?$

$\qquad B = \dfrac{135}{323} \times 16\overset{5}{15} = 675 R_1.$

$\qquad$ Ans : ③

20. $A:B = \quad 2:3$

$\quad B:C = \quad 4:5$

$\quad C:D = \quad 6:7$

$\qquad\rule{4cm}{0.4pt}$

$A:B:C:D = 48 : 72 : 90 : 105$

$\qquad\qquad = 16 : 24 : 30 : 35$

$A:B:C:D = 16 : 24 : 30 : 35$

$16+24+30+35 = 105 \longrightarrow 8,400$

$\qquad\qquad A = 16 \longrightarrow ?\overset{80}{}$

$\qquad\qquad A = \dfrac{16}{105} \times 8400$

$\qquad\qquad\qquad\overset{7}{}$

$\qquad\qquad A = 1280$

$\qquad\qquad$ Ans. ④

(1) $\qquad B = \dfrac{3}{2} A \implies A:B = 2:3$

$\quad A:B = 2:3$

$\qquad = (2 \times 10) + \left(\dfrac{3}{2} \times 2\right) : (3 \times 8) + \left(\dfrac{3}{2} \times 4\right)$

$\qquad = (20 + 3) : (24 + 6)$

$\qquad = 23 : 30$

$\quad 23 + 30 = 53 \longrightarrow 53,000$

$\qquad\qquad A - 23 \longrightarrow ?$

$\qquad\qquad A = \dfrac{23}{53} \times 5\overset{1000}{3,000}$

$\qquad\qquad A = 23,000 \quad$ Ans : ④

Ⓑ ③ $\quad A:B:C = 5x : 4x : 3x$

$A:B:C = (5x \times 12) : (4x \times 4) + (4x+1000) \times 8)$

$\qquad\qquad : (3x \times 8) + (3x+200 \cdot 7 \times 4$

$\qquad = 15x : 12x+2000 : 9x+2000$

$\qquad \dfrac{15x}{12x+2000} = \dfrac{15}{14}$

$\qquad 14x = 12x+2000$

$\qquad 2x = 2000$

$\qquad x = 1000$

$\qquad c = 3x = 3 \times 1000 = 3000$

$\qquad$ Ans : ①