8 CHAPTER

Profit and Loss

1. A man sold an item for ₹7,500 and incurred a loss of 25%. At what price should he have sold the item to have gained a profit of 25%? **(IBPS Clerk 2011)**
(a) ₹13,800 (b) ₹12,500
(c) ₹11,200 (d) Cannot be determined
(e) None of these

2. Sarita earned a profit of 30 per cent on selling an article for ₹6,110. What was the cost price of the article ? **(IBPS Clerk 2011)**
(a) ₹5,725 (b) ₹4,080 (c) ₹5,250 (d) ₹4,400
(e) None of these

3. Sujit incurred a loss of 45 percent on selling an article for ₹3,740. What was the cost price of the article? **(IBPS Clerk 2011)**
(a) ₹5,725 (b) ₹5,080 (c) ₹6,250 (d) ₹6,400
(e) None of these

4. Mehul sold an item for ₹5,625 and incurred a loss of 25%. At what price should he have sold the item to gain a profit of 25%? **(IBPS Clerk 2011)**
(a) ₹9,375 (b) ₹10,500
(c) ₹8,250 (d) Cannot be determined
(e) None of these

5. Kartik sold an item for ₹ 6,500 and incurred a loss of 20%. At what price should he have sold the item to have gained a profit of 20%? **(IBPS Clerk 2011)**
(a) ₹10,375 (b) ₹ 9,750
(c) ₹ 8,125 (d) Cannot be determined
(e) None of these

6. Manoj incurred a loss of 40 percent on selling an article for ₹ 5,700. What was the cost price of the article? **(IBPS Clerk 2011)**
(a) ₹ 7,725 (b) ₹ 9,080 (c) ₹ 8,250 (d) ₹ 9,400
(e) None of these

7. Raj sold an item for ₹ 6,384 and incurred a loss of 30%. At what price should he have sold the item to have gained a profit of 30% ? **(IBPS Clerk 2011)**
(a) ₹14,656 (b) ₹11,856
(c) ₹13,544 (d) Cannot be determined
(e) None of these

8. A dishonest dealer prefers to sell his goods at cost price but uses less weight for a kg weight and gains $4\frac{1}{6}\%$. What does he use for a kg weight? **(SBI PO 2011)**
(a) 950 gm (b) 980 gm (c) 960 gm (d) 840 gm
(e) None of these

9. A shopkeeper labelled the price of his articles so as to earn a profit of 30% on the cost price. He,then sold the articles by offering a discount of 10% on the labelled price. What is the actual per cent profit earned in the deal? **(SBI PO 2011)**
(a) 18% (b) 15%
(c) 20% (d) Cannot be determined
(e) None of these

10. The owner of an electronic store charges his customer 11 % more than the cost price. If a cutomer paid ₹ 1,33,200 for an LED T.V., then what ws the original price of the T. V. ? **(RBI Assistant 2012)**
(a) ₹ 1,20,000 (b) ₹ 1,14,500
(c) ₹ 1,22,500 (d) ₹ 1,18,000
(e) None of these

11. Mohan sold an item for ₹ 4,510 and incurred a loss of 45%. At what price should he have sold the item to have gained a profit of 45%? **(RBI Assistant 2012)**
(a) ₹ 10,900 (b) ₹ 12,620
(c) ₹ 11,890 (d) Cannot be determined
(e) None of these

DIRECTIONS (Qs. 12-14) : Study the information given below and answer the questions that follow :

An article was bought for ₹ 5600. Its price was marked up by 12%. Thereafter it was sold at a discount of 5% on the market price. **(SBI Clerk 2012)**

12. What was the market price of the article ?
(a) ₹ 6207/- (b) ₹ 6242/- (c) ₹ 6292/- (d) ₹ 6192/-
(e) ₹ 6272/--

13. What was the percent profit on the transaction ?
(a) 6.8% (b) 6.3% (c) 6.4% (d) 6.6%
(e) 6.2%

14. What was the amount of discount given ?
(a) ₹ 319.6 (b) ₹ 303.6 (c) ₹ 306.3 (d) ₹ 313.6
(e) ₹ 316.9

15. 21 articles were bought for ₹ 6531 and sold for ₹ 9954. How much was the approximate profit percentage per article ? **(SBI Clerk 2012)**
(a) 56% (b) 43% (c) 52% (d) 49%
(e) 61%

16. The cost price of an article is ₹ 1700. If it was sold at a price of ₹ 2006, what was the percentage profit on the transaction ? **(SBI Clerk 2012)**
(a) 18 (b) 12 (c) 10 (d) 15
(e) 20

17. Meera purchased 23 bracelets at the rate of ₹160 per bracelet. At what rate per bracelet should she sell the bracelets so that profit earned is 15% ? **(SBI Clerk 2012)**
(a) ₹ 184/- (b) ₹ 186/- (c) ₹ 192/- (d) ₹ 198/-
(e) None of these

18. A certain number of capsules were purchased for ₹ 216,15 more capsules could have been purchased in the same amount if each capsule was cheaper by ₹ 10. What was the number of capsules purchased? **(IBPS Clerk 2013)**
(a) 6 (b) 14 (c) 8 (d) 12
(e) 9

19. Pure milk costs ₹ 16 per litre. After adding water the milkman sells the mixture ₹ 15 per litre and thereby makes a profit of 25%. In what respective ratio does he mix milk with water? **(IBPS Clerk 2013)**
(a) 3 : 1 (b) 4 : 3 (c) 3 : 2 (d) 5 : 3
(e) 4 : 1

20. Manish brought 25 kg of rice at ₹ 32 per kg and 15 kg of rice at ₹ 36 per kg. what profit did he get when he mixed the two varieties together and sold it at ₹ 40.20 per kg? **(IBPS SO 2013)**
(a) 25% (b) 40% (c) 30% (d) 20%
(e) None of these

21. A grocer purchased 80 kg of sugar at ₹ 13.50 per kg and mixed it with 120 kg sugar at ₹ 16 per kg. At what rate should he sell the mixture to gain 16% ? **(IBPS Clerk 2014)**
(a) ₹ 17 per kg (b) ₹ 17.40 per kg
(c) ₹ 16.5 per kg (d) ₹ 16 per kg
(e) None of these

22. A man sells three motors for ₹ 5,400, ₹ 3,300 and ₹ 4,350 respectively. He makes 20% profit on the first and 10% profit on the second but on the whole he loses $9\frac{3}{8}$%. What did the third motor car cost him ? **(IBPS Clerk 2014)**
(a) ₹ 6500 (b) ₹ 6900 (c) ₹ 5100 (d) ₹ 7200
(e) None of these

23. A shopkeeper purchased 200 bulbs for ₹ 10 each. However, 5 bulbs were fused and had to be thrown away. The remaining were sold at ₹ 12 each. What will be the percentage profit ? **(SBI Clerk 2014)**
(a) 25 (b) 15 (c) 13 (d) 17
(e) None of these

24. The profit earned after selling a pair of shoes for ₹ 2,033 is the same as loss incurred after selling the same pair of shoes for ₹ 1,063. What is the cost of the shoes ? **(SBI Clerk 2014)**
(a) ₹ 1,650 (b) ₹ 1,548
(c) ₹ 1,532 (d) Cannot be determined
(e) None of these

25. 10% discount and then 20% discount in succession is equivalent to total discount of **(SBI Clerk 2014)**
(a) 15% (b) 30% (c) 24% (d) 28%
(e) None of these

26. The marked price of a watch was ₹720. A man bought the same for ₹550.80 after getting two successive discounts, the first being 10%. The second discount rate is **(SBI Clerk 2014)**
(a) 12% (b) 14% (c) 15% (d) 18%
(e) None of these

27. Allowing 20% and 15% successive discounts, the selling price of an article becomes ₹3,060; then the marked price will be **(SBI Clerk 2014)**
(a) ₹4,400 (b) ₹5,000 (c) ₹4,500 (d) ₹4,000
(e) None of these

28. The average weight of 15 oarsmen in a boat is increased by 1.6 kg when one of the crew, who weighs 42 kg is replaced by a new man. Find the weight of the new man (in kg). **(SBI Clerk 2014)**
(a) 65 (b) 66 (c) 43 (d) 67
(e) None of these

29. When the price of a radio was reduced by 20%, its sale increased by 80%. What was the net effect on the sale? **(IBPS PO/MT 2014)**
(a) 44% increase (b) 44% decrease
(c) 66% increase (d) 75% increase
(e) None of these

30. Gauri went to the stationery and bought things worth ₹25, out of which 30 paise went on sales tax on taxable purchases. If the tax rate was 6%, then what was the cost of the tax free items? **(IBPS PO/MT 2014)**
(a) ₹15 (b) ₹15.70 (c) ₹19.70 (d) ₹20
(e) None of these

31. A man bought a horse and a carriage for ₹ 3000. He sold the horse at a gain of 20% and the carriage at a loss 10%, thereby gaining 2% on the whole. Find the cost of the horse. **(IBPS SO (IT) 2014)**
(a) ₹ 1000 (b) ₹ 1200 (c) ₹ 1500 (d) ₹ 1700
(e) None of these

32. Naresh purchased a TV set for ₹11,250 after getting discount of 10% on the labelled price. He spent ₹150 on transport and ₹800 on installation. At what price should it be sold so that the profit earned would be 15% if no discount was offered? **(IBPS SO (IT) 2014)**
(a) ₹12,937.50 (b) ₹14,030
(c) ₹ 13,450 (d) ₹15,467.50
(e) None of these

33. Prathik sold a music system to Karthik at 20% and Karthik sold it to Swasthik at 40% gain. If Swasthik paid ₹ 10,500 for the music system, what amount did Prathik pay for the same? **(IBPS SO (IT) 2014)**
(a) ₹ 8,240 (b) ₹ 7,500
(c) ₹ 6,250 (d) Cannot be determined
(e) None of these

34. An article was sold for ₹ 5220 at a loss of 42% of the cost price. What will be the selling price of the article for a profit of 42% ? **(Corporation Bank SO 2014)**
(a) ₹ 12580 (b) ₹ 17280 (c) ₹ 12780 (d) ₹ 15280
(e) None of these

35. A manufacturer sells a pair of glasses to a wholesale dealer at a profit of 18%. The wholesaler sells the same to a retailer at a profit of 20%. The retailer in turn sells them to a customer for ₹ 30.09, thereby earning a profit of 25%. The cost price for the manufacturer is **(IBPS RRB OS 2014)**
(a) ₹ 15 (b) ₹ 16 (c) ₹ 17 (d) ₹ 18
(e) None of these

36. A shopkeeper labelled the price of his articles so as to earn a profit of 30% on the cost price. He then sold the articles by offering a discount of 10% on the labelled price. What is the actual percent profit earned in the deal? **(IBPS RRB OA 2015)**
(a) 18% (b) 15%
(c) 20% (d) Can't be determined
(e) None of these

37. A person sold an article from ₹ 3600 and got a profit of 20%. Had he sold the article for ₹ 3150, how much profit would he have got? **(SBI Clerk 2015)**
(a) 4% (b) 5% (c) 6% (d) 10%
(e) None of these

38. A man buys 4 tables and 5 chairs for ₹ 1000. If he sells the tables at 10% profit and chairs 20% profit, he earns a profit of ₹ 120. What is the cost of one table? **(SBI Clerk 2015)**
(a) ₹200 (b) ₹220 (c) ₹240 (d) ₹260
(e) None of these

39. A refrigerator and a camera were sold for ₹ 12000 each. The refrigerator was sold at a loss of 20% of the cost and the camera at a gain of 20% of the cost. The entire transaction results in which one of the following? **(SBI Clerk 2015)**
(a) No loss or gain (b) Loss of ₹ 1000
(c) Gain of ₹ 1000 (d) Loss of ₹ 2000
(e) None of these

40. If the cost price of 15 articles be equal to the selling price of 20 articles, then find the loss% in the transaction. **(IBPS SO (IT) 2015)**
(a) 16% (b) 20% (c) 25% (d) 26%
(e) None of these

41. A milkman bought 15 kg of milk and mixed 3 kg of water in it. If the price per kg of the mixture becomes ₹ 22, what is cost price of the milk per kg? **(IBPS RRB OS 2015)**
(a) ₹28.00 (b) ₹26.40 (c) ₹24.00 (d) ₹22.00
(e) None of these

42. The marked price of a machine is ₹ 18000. By selling it at a discount of 20%, the loss is 4%. What is the cost price of the machine? **(IBPS RRB OS 2015)**
(a) ₹10000 (b) ₹12000 (c) ₹14000 (d) ₹15000
(e) None of these

43. The price of an article is ₹ 25. After two successive cuts by the same percentage, the price becomes ₹ 20.25. If each time the cut was x%, then **(IBPS RRB OS 2015)**
(a) $x = 9$ (b) $x = 10$ (c) $x = 11$ (d) $x = 11.5$
(e) None of these

44. The profit earned after selling an article for ₹878 is the same as loss incurred after selling the article for ₹636. What is the cost price of the article? **(SBI Bank PO Prelim 2015)**
(a) ₹797 (b) ₹787 (c) ₹767 (d) ₹757
(e) None of these

45. A dealer marked the price of an item 40% above the cost price. Once he gave successive discounts of 20% and 25% to a particular customer. As a result, he incurred a loss of ₹ 448. At what price did he sell the item to the mentioned customer? **(IBPS IT Specialist 2015)**
(a) ₹2416 (b) ₹2352 (c) ₹2268 (d) ₹2152
(e) ₹2578

46. An article is marked at ₹18,000. A trader bought it at successive discounts of 25% and 10% respectively. He spent ₹1,350 on its transportation to his shop and then sold the article for ₹15,000. What is trader's profit% in the whole transaction? **(SBI Clerk Prelim 2015)**
(a) $16\frac{2}{3}\%$ (b) 28% (c) 30% (d) $11\frac{1}{9}\%$
(e) 20%

47. If a trader estimates his loss as 10% of the selling price, what is his real loss percent? **(IBPS Clerk Main 2016)**
(a) $\frac{100}{8}\%$ (b) $\frac{100}{11}\%$ (c) $\frac{100}{13}\%$ (d) $\frac{100}{7}\%$
(e) None of these

48. Shopkeeper purchased some goods for ₹ 900 and sold one-third of the goods at a loss of what 12%, then at what gain % should the remainder goods he sold to gain 18% profit on the whole transaction ? **(IBPS PO Pre 2016)**
(a) 31% (b) 26% (c) 33% (d) 18%
(e) None of these

49. Deepak found that he had made a loss of 10% while selling his smartphone. He also found that had he sold it for Rs.50 more, he would have made a profit of 5%. The initial loss was what percentage of the profit earned, had he sold the smartphone for a 5% profit ? **(IBPS PO Mains 2016)**
(a) 100% (b) 200% (c) 75% (d) 85%
(e) None of the Above

50. A person sell two horses for rupees 480 each. On the first horse he gains 25 percent and on the second horse he losses 25 percent. Find the percent gain or loss in the transaction. **(SBI PO Pre 2016)**
(a) loss 6.75% (b) gain 6.75%
(c) loss 6.25% (d) gain 6.25%
(e) None of these

51. A trader gives an additional concession of 35% on an article which is already get discounted by 20% on the marked price. If the buyer pays an amount of 1300 for the article, then the marked price is **(SBI PO Mains 2016)**
(a) 2200 (b) 2500 (c) 2600 (d) 2700
(e) None of these

52. An article is marked up 40% higher than CP but it was sold x% on discount. The shopkeeper thus gains 12%. What would be the S.P. of the article with C.P. ₹ 120 and sold on x % profit ? **(SBI PO Pre Exam 2017)**
(a) ₹134.50 (b) ₹144 (c) ₹128 (d) ₹148
(e) None of these

53. A trader mixes 14 kg rice of variety A which costs ₹ 60/kg with 18 kg of quantity of type B rice. He sells the mixture at ₹ 65/kg and earns a profit of $\frac{100}{3}\%$. Then what was the cost price of type B rice. **(IBPS RRB Scale-I Pre Exam 2017)**
(a) 30 (b) 20 (c) 40 (d) 50
(e) 45

54. Cost price of B is 200 more than cost price of A. B is sold at 10% profit and A is sold at 40% loss and selling price of A and B are in the ratio 4 : 11. If A is sold at 20% loss then what will be selling price of A. **(IBPS RRB Scale-I Pre Exam 2017)**
(a) 320 (b) 400 (c) 240 (d) 160
(e) 360

55. 35kg of a type of milk powder (type A) which costs ₹ 614 per kg was mixed with certain amount of another type of milk powder (type B), which costs ₹ 695 per kg. Then the mixture was sold at ₹ 767 per kg and 18% profit was gained. What was the amount of type B milk powder in the mixture ? **(IBPS RRB Scale 2 & 3 Main Exam 2017)**

(a) 24 kg (b) 28 kg (c) 32 kg (d) 36 kg
(e) 20 kg

56. Marked price of A is ₹ 1600 more than its cost price. When discount on A is 500 a profit of 25% is obtained. At what price should A be sold to obtain a 30% profit.
(IBPS PO Pre Exam 2017)
(a) 4800 (b) 5600 (c) 5400 (d) 5200
(e) None of these

57. The ratio of cost price to the selling price of an article is 5 : 6. If 20% discount is offered on marked price of the article then marked price is what percent more than cost price? **(IBPS PO Pre Exam 2017)**
(a) $\frac{100}{3}$% (b) 50% (c) 40% (d) $\frac{200}{3}$%
(e) 60%

58. A certain product C is made of two ingredients A and B in the proportion of 2: 5. The price of A is three times that of B. The overall cost of C is ₹ 5.20 per kg including labour charges of 80 paisa per kg. Find the cost of B per kg? **(IBPS PO Main Exam 2017)**
(a) ₹ 8.40 (b) ₹ 4.20 (c) ₹ 4.80 (d) ₹ 2.80
(e) None of these

59. A man bought a scooter and a car. He sold all of them at 30% profit. Scooter is sold at 10% profit. Cost price of scooter is 1/10 of the cost of car. Marked price of a car is ₹ 4,50,000. If he bought scooter at a discount of 20% on marked price and car at a discount of 10% on marked price then, what will be the ratio of marked price of scooter to the selling price of the car. **(IBPS PO Main Exam 2017)**
(a) 25/264 (b) 25/268 (c) 35/260 (d) 34/260
(e) None of these

60. C.P. of two books is same. One sold at 15% profit and the other for ₹ 4800 more than the first. If the net profit is 20% then find the C.P. of each book?
(IBPS SO IT Officer Pre. 2018)
(a) ₹ 48000 (b) ₹ 480 (c) ₹ 4800 (d) ₹ 38000
(e) ₹ 3800

61. The cost price of goods is 20% below the marked price. He sold half he stock at the marked price. One quarter at a discount of 10% on the marked price and rest at a discount of 30% on the marked price. His total gain is :
(IBPS RRB PO Pre-2018)
(a) 7.5% (b) 9% (c) 10.5% (d) 12.5%
(e) 17.25%

62. P invests ₹ 6,000 for X months while Q invests ₹ 8,000 for 9 months in a scheme. The profit share of Q is ₹ 24,000 out of total profit ₹ 42,000. Then find the value of X ?
(IBPS RRB Clerk Pre-2018)
(a) 6 months (b) 9 months (c) 8 months (d) 7 months
(e) 10 months

63. A shopkeeper marked his article 60% above the cost price and gives a discount of 30% on it. If he had marked his article 80% above the cost price and gives a discount of 30% on it then find the earlier profit is what percent of the profit earned latter? **(RRB PO Pre-2018)**
(a) 46% (b) 60% (c) $33\frac{1}{3}$% (d) 40%
(e) 55%

64. P and Q entered into a partnership by investing some amounts. The investment of P is thrice of the investment of Q. Another person R joined them after 3 months. At the end of a year, the profit share of P and R is equal. Then find the profit share of Q is what percent of the profit share of R. **(RRB PO Pre-2018)**
(a) 50% (b) $33\frac{1}{3}$% (c) 40% (d) 60%
(e) 32%

65. In place of 18% profit an article is sold at 32% profit and seller gets ₹ 112 more. Find the selling price of article if it were sold at 25% profit? **(SBI Clerk Pre-2018)**
(a) ₹ 440 (b) ₹ 460 (c) ₹ 1000 (d) ₹ 550
(e) ₹ 525

66. A shopkeeper marked price of a shirt 50% more than the CP of the shirt. When he sells the shirt at x% discount then _____% profit is obtained and when it is sold at a discount of 2x%, _____% profit is obtained. Which of the following options are possible for the blanks in same order **(IBPS PO Main-2018)**
A. 60, 30 B. 20, 8
C. 38, 26 D. 35, 20
E. 41, 32
(a) A and E (b) B, D and E
(c) C, D and E (d) All are possible
(e) A, D and E

67. Ratio between marked price of two piano xx to piano yy is 4 : 5. Shopkeeper allowed d% discount on piano xx and (d + 18) % discount on piano yy, so selling price of both piano becomes equal. If shopkeeper made a profit of 20% on piano xx and 25% on piano yy and profit made on piano yy is ₹ 384 more than that of piano xx, then find the cost price of piano xx and piano yy respectively? **(IBPS PO Main-2018)**
(a) ₹ 9000 × ₹ 8400 (b) ₹ 9600 × ₹ 9216
(c) ₹ 9800 × ₹ 9012 (d) ₹ 9600 × ₹ 8488
(e) ₹ 9200 × ₹ 9216

68. A shopkeeper sells two books, he sold 1 book at profit and other book at loss. SP of each of the two books is ₹ 600 and profit percentage on 1 book is equal to loss percentage on other. If overall loss of shopkeeper is 6.25%, then find difference between cost price of both book.
(IBPS Clerk Prelim-2019)
(a) ₹ 360 (b) ₹ 480 (c) ₹ 160 (d) ₹ 320
(e) None of these

69. There are two shopkeepers, first shopkeeper calculates his profit percent on the selling price whereas the second shopkeeper calculates his profit percent on the cost price. If the selling price for both the shopkeeper is same and the difference between their profits is ₹ 175. Then, calculate the sum of the cost price for both the shopkeeper if the profit percent for the both shopkeeper is 25%? **(IBPS Clerk Main-2019)**
(a) ₹ 5425 (b) ₹ 4875 (c) ₹ 4675 (d) ₹ 5275
(e) ₹ 5325

70. 'Dhaniram' is a bread seller who marked up price of each bread packet by 150% above and allow a discount of 40% and made a profit of ₹ 30 on each bread packet. If he allows 37.5% discount on each packet, then find how much profit he gets on selling 75 bread packets? **(IBPS Clerk Main-2019)**
(a) ₹2550 (b) ₹2731.50 (c) ₹2500 (d) ₹2531.25
(e) ₹2400.25

71. Rohan and Sohan entered into a partnership investing ₹ 1600 and ₹ 1200 respectively. After 4 months, Rohan withdrew ₹500 while Sohan invested additional ₹ 500. After another 4 months Ghanshyam joined the business with a capital of ₹ 2100. The share of Sohan exceeds that of Ghanshyam, out of a total profit of ₹ 2640 after one year, by how much amount ? **(IBPS PO Main-2019)**
(a) 620 (b) 628.6 (c) 626.8 (d) 652.7
(e) None of these

72. A manufacturer sells a pair of books to a wholesale dealer at a profit of 23%. The wholesaler sells the same to a retailer at a profit of 25%. The retailer in turn sells them to a customer for ₹80, thereby earning a profit of 25%. The cost price for the manufacturer is **(IBPS Clerk Main-2019)**
(a) 47 (b) 41.6 (c) 42 (d) 43.7
(e) None of these

73. Oppo produces very fine quality of mobile. Company knows that on an average 10% of the produced mobiles are always defective so are rejected before packing. Company promises to deliver 720 mobile to its wholesaler at ₹8000 each. It estimates the overall profit on all the manufactured mobile to be 25%. What is the manufacturing cost of each mobile. **(IBPS Clerk Main-2019)**
(a) ₹6000 (b) ₹5760 (c) ₹6500 (d) ₹5400
(e) ₹5300

74. A person purchased two Bags at the same price and on selling the first Bag he makes a profit of 10%. Selling price of second Bag is ₹ 90 more than the selling price of the first Bag. Find the cost price of one Bag if his overall profit percent is 13%? **(SBI PO Prelim-2019)**
(a) ₹1800 (b) ₹3000 (c) ₹2000 (d) ₹2400
(e) None of these

75. 35kg of a type of gram (type A) which costs ₹ 614 per kg was mixed with certain amount of another type of gram (type B), which costs ₹ 695 per kg. Then the mixture was sold at ₹ 767 per kg and 18% profit was gained. What was the amount of type B in the mixture? **(SBI PO Main-2019)**
(a) 24 kg (b) 28 kg (c) 32 kg (d) 36 kg
(e) 20 kg

76. Raj, Shikha and Dixit invested in a ratio of 7: 8: 5 in a business. They got an annual profit of Rs. 91200. If Raj and Dixit withdrew their amount at the end of 3 months and 7 months respectively. Then find the difference between Raj and Dixit's share of profit? **(SBI Clerk Prelim-2019)**
(a) ₹8400 (b) ₹9,500 (c) ₹13,500 (d) ₹10,500
(e) ₹.8600

77. John sold his bycicle at $33\frac{1}{3}\%$ profit and another at 100% profit. Find his overall profit percentage if the selling price of both the bycicle is same? **(SBI Clerk Prelim-2019)**
(a) 60% (b) 58% (c) $67\frac{2}{3}\%$ (d) 67%
(e) $56\frac{2}{3}\%$

78. Vijay, Ajay and Sanjay enter into a partnership. Vijay contributes $\frac{1}{4}$ of the capital for half of the time. Ajay advances $\frac{1}{5}$ of the capital for $\frac{1}{4}$ of the time. Sanjay contribute the remaining capital for the whole time. Find the share of Ajay and Sanjay together in the profit of ₹ 17,400? **(SBI Clerk Main-2019)**
(a) ₹14,400 (b) ₹16,500 (c) ₹6,000 (d) ₹14,700
(e) None of These

79. If a shopkeeper marks an item 60% above its CP and if 20% discount is given on the marked price and the shopkeeper makes profit of ₹ 210, then what will be the actual cost price of the item ? **(IBPS RRB PO Prelim-2019)**
(a) ₹1000 (b) ₹800 (c) ₹750 (d) ₹1200
(e) ₹900

80. When a man sold an article, his profit percent is 50% of the selling price. If the cost price is increased by 60% and the selling price remains the same, then find decrement in the profit percent on the selling price of the article? **(IBPS RRB PO Prelim-2019)**
(a) 25% (b) 30% (c) 40% (d) 27.5%
(e) None of these

81. An article is marked $33\frac{1}{3}\%$ above the cost price and loss incurred on selling that article is 25% of the discount given on it. Then, find the discount % given? **(IBPS RRB PO Prelim-2019)**
(a) 33% (b) $33\frac{1}{3}\%$ (c) $32\frac{1}{3}\%$ (d) $33\frac{2}{3}\%$
(e) 30%

82. The total cost price of two articles P and Q is ₹ 10000. P is sold at 15% profit and Q is sold at 20% profit. If the profit percent is interchanged, the profit earned is 200 more than the previous, find the profit/loss percent if article P is sold at ₹ 6000 **(IBPS RRB PO Main-2019)**
(a) 14.28 % loss (b) 15 % Profit
(c) 10 % loss (d) 10 % profit
(e) None of these

83. Marked price of an article is ₹ 500 more than cost price of that article and it is sold at a discount of 15% on marked price. Find the cost price of the article if the profit percent earned is 27.5% ? **(IBPS RRB Clerk Prelim-2019)**
(a) 950 (b) 1000 (c) 900 (d) 980
(e) 990

84. A shopkeeper gives 20% discount on a book and he still earns a profit of $33\frac{1}{3}\%$ on the book. If cost price of book is ₹ 900, then what is the discount given on the book? (in ₹) **(RBI Assist Prelim-2020)**
(a) 200 (b) 100 (c) 300 (d) 250
(e) 150

85. A and B invested in the ratio of 3:2 respectively. They both invested for 9 months. If total profit is ₹15000, then find the profit share of B? **(RBI Assist Prelim-2020)**
(a) ₹6000 (b) ₹4500 (c) ₹6400 (d) ₹5000
(e) ₹5500

Answers & Explanations

1. (b) Let Cost Price of article be x

$$S.P = x - \frac{25}{100}x = 7500$$

$$\frac{75}{100}x = 7500$$

$$x = \frac{7500 \times 100}{75} = 10000$$

S.P. of article to have gain 25% $= 1000 + \frac{25}{100} \times 10000$

$= ₹\,12500$

Alternate Solution:

For loss of 25%

$$\frac{3}{4} = \frac{SP \to 7500}{CP} \Rightarrow CP = \frac{4 \times 7500}{3} = ₹10000$$

For 25% profit

$$SP = \frac{5}{4} \times 10000 = ₹12500$$

2. (e) Let Cost Price of article be x

$$\text{Selling Price, } S.P = x + \frac{30}{100}x = 6110$$

$$\frac{130}{100}x = 6110 \; x = \frac{6110 \times 100}{130} = 4700$$

Cost Price of article is ₹ 4,700.

3. (e) Let Cost Price of article be x

According to question

$$x - \frac{45}{100}x = 3740$$

$$\Rightarrow \frac{55}{100} = 3740 \Rightarrow x = 6800$$

4. (a) Let Cost Price of item be x

$$\text{Selling Price} = x - \frac{25}{100}x = 5625$$

$$\frac{75x}{100} = 5625$$

$$x = 5625 \times \frac{100}{75} = 7500$$

Selling Price ofter going 25%

$$S.P = 7500 + \frac{25}{100} \times 7500 = 9375$$

5. (b) Let Cost Price item be x

$$\text{Its Selling Price} = x - \frac{20}{100}x = 6500$$

$$\frac{80x}{100} = 6500$$

$$x = 65000 \times \frac{100}{80} = 8125$$

S.P of item to have gained a profit of 20%

$$= 8125 + \frac{20}{100} \times 8125 = 9750$$

6. (e) Let Cost Price of article be x

$$x - \frac{40}{100}x = 5700$$

$$\frac{60}{100}x = 5700$$

$$x = \frac{5700 \times 100}{60} = 9500$$

Cost Price of the article is ₹ 9,500.

7. (b) Let cost price of item be x

$$x - \frac{30}{100}x = 6384$$

$$\frac{70x}{100} = 6384$$

$$x = 6384 \times \frac{100}{70} = 9120$$

SP of item with 30% Profit $= 1.3x = 1.3 \times 9120$

$= ₹\,11,856$

8. (c) $100 \times \frac{1000}{x} - 100 = \frac{25}{6} \Rightarrow x = 960$ gm

9. (e) Let the cost price of the articles be ₹100

Marked Price = ₹130

After giving a discount of 10% the selling price of the articles $= 0.9 \times 130 = 117$

$$\text{So, actual profit per cent} = \frac{(117 - 100)}{100} \times 100 = 17\%$$

10. (a) Let original price of TV $= x$

Customer paid = 111% of x = ₹ 133200

$$\therefore \quad x = \frac{133200 \times 100}{111} = ₹\,1,20,000$$

11. (c) Let cost price of article $= x$

Now 55% of x = ₹ 4510

$$\text{Therefore } x = \frac{4510}{55} \times 100 = ₹\,8200$$

To gain profit of 45% selling price is 145 % of 8200 is ₹ 11890.

Sol. (12-14) :

12. (e) Cost price of article = ₹ 5600

$$\text{Marked price} = 5600 + 5600 \times \frac{12}{100} = 6272$$

$$\therefore \text{ SP } = 6272 - 6272 \times \frac{5}{100} = 5958.4$$

13. (c) $$\text{Profit\%} = \frac{5958.4 - 5600}{5600} \times 100$$

$$= \frac{358.4}{56} = 6.4\%$$

14. (d) $$\text{Amount of discount} = 6272 \times \frac{5}{100}$$

$$= 313.6$$

15. (c) Cost price per article = 311

$$\text{Selling price per article} = \frac{9954}{21} = 474$$

$$\text{Profit per article} = \frac{474 - 311}{311} \times 100 = 52\%$$

16. (a) $$\%\text{profit} = \frac{2006 - 1700}{1700} \times 100 = \frac{306}{1700} \times 100 = 18\%$$

17. (a) Cost of 23 bracelet purchased at rate of ₹ 160/bracelet
= ₹ 23 × 160 = ₹ 3680
If profit earned is 15%, then

$$\text{Profit amount} = \frac{3680 \times 15}{100} = ₹ 552$$

Total amount Meera have after selling 23 bracelets
= 3680 + 552 = 4232

$$\text{S.P. of one bracelet} = \frac{4232}{23} = ₹ 184.$$

18. (d) Let x be the price of one capsule
y be the total number of capsule.
$xy = 216$ ...(1)
$(x - 10)(y + 15) = 216$ ...(2)
From eqs (1) and (2)

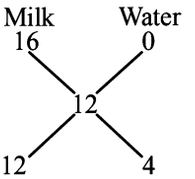
$$\left(\frac{216}{y} - 10\right)(y + 15) = 216$$

$$(216 - 10y)(y + 15) = 216y$$
$$216y + 216 \times 15 - 10y^2 - 150y = 216y$$
$$216y + 3240 - 10y^2 - 150y = 216y$$
$$-10y^2 - 150y + 3240 = 0$$
$$y^2 + 15y - 324 = 0$$
$$y = 12$$

19. (a) ∵ SP of the mixture = ₹ 15

$$\therefore \text{ CP of the mixture} = 15 \times \frac{100}{125} = ₹ 12$$

Now, by the rule of mixture,



∴ Ratio of milk and water in the mixture
= 12 : 4 = 3 : 1

20. (d) C.P. of 40 kg of mixture
= ₹ [(25 × 32) + (15 × 36)]
= ₹ (800 + 540)
= ₹ 1340
S.P. of 40 kg of mixture
= ₹ (40 × 40.2)
Profit = ₹ (1608 – 1340) = ₹ 268

$$\text{Profit \%} = \frac{268}{1340} \times 100 = 20\%$$

21. (b) C.P. of 200 kg of mixture = ₹ (80 × 13.50 + 120 × 16)
= ₹ 3000.

$$\text{S.P.} = 116\% \text{ of } ₹ 3000 = ₹ \left(\frac{116}{100} \times 3000\right) = ₹ 3480.$$

$$\therefore \quad \text{Rate of S.P. of the mixture} = ₹ \left(\frac{3480}{200}\right) \text{ per kg}$$

= ₹ 17.40 per kg.

22. (b) S.P. for the first car = ₹ 5,400 and profit = 20%

$$\therefore \text{ C.P. for the first car} = \frac{100}{120} \times 5,400 = ₹ 4,500$$

S.P. for the second car = ₹ 3,300 and profit = 10%

$$\therefore \quad \text{C.P. for second car} = \frac{100}{110} \times 3,300 = ₹ 3,000$$

$$\text{and loss} = \frac{75}{8}\%$$

S.P. of three cars = 5,400 + 3,300 + 4350 = ₹ 13,050

$$\therefore \text{ Total C.P. for the three cars} = \frac{100 \times 8}{725} \times 13,050$$

= 14,400

∴ C.P. for third car = 14,400 – 4,500 – 3,000 = ₹ 6,900

23. (d) Total cost price = 200 × 10 = ₹ 2000
Total selling price = 12 × 195 = ₹ 2340

$$\therefore \text{ Profit per cent} = \frac{2340 - 2000}{2000} \times 100 = 17\%$$

24. (b) Let the CP of the shoes be ₹ x.
∴ 2033 – x = x – 1063
⇒ 2x = 2033 + 1063 = 3096

$$\Rightarrow x = \frac{3096}{2} = ₹ 1548$$

25. (d) Successive discount can be given by $= x + y + \frac{xy}{100}$

$$= -10 - 20 + \frac{(-10 \times -20)}{100} = -30 + 2 = -28\%$$

Hence, the successive dicount in equal to 28%

26. (c) Let the second discount be x%. Then
$(100-x)\%$ of 90% of $720 = 550.80$

$$\Rightarrow \frac{100-x}{100}\times\frac{90}{100}\times 720 = \frac{55080}{100}$$

$$\Rightarrow (100-x) = \frac{55080\times 100}{90\times 720} = 85$$

$$\Rightarrow x = 100-85 = 15\%$$

27. (c) S.P. of an article = 20% and 15% successive discount × marked price of an article

$$3060 = \frac{80}{100}\times\frac{85}{100}\times \text{marked price of an article}$$

$$\therefore \text{Marked of an article} = \frac{3060\times 100\times 100}{80\times 85} = 4500$$

28. (b) Let the average weight of 15 Oarsmen at the start = x kg
Let the new man's weight = y kg
According to question
$15x-42 = 15(x+1.6)-y$
$15x-42 = 15x+24-y$
$y = 24+42 = 66$ kg

29. (a) $\text{Net effect} = x+y+\frac{xy}{100} = -20+80+\frac{(-20\times 80)}{100}$
$= 60-16 = 44\%$ increase

30. (c) Let the amount taxable purchases be ₹ x.
Then, 6% of $x = \frac{30}{100}$

$$\Rightarrow x = \left(\frac{30}{100}\times\frac{100}{6}\right) = 5.$$

$\therefore$ Cost of tax free items = ₹ $[25-(5+0.30)]$ = ₹19.70

31. (b) Let the C.P. of horse = ₹ x
Then the C.P. of carriage = ₹ $(3000-x)$
20% of $x-10\%$ of $(3000-x) = 2\%$ of 3000

$$\Rightarrow \frac{x}{5}-\frac{(3000-x)}{10} = 60$$

$$\Rightarrow 2x-3000+x = 600$$

$$\Rightarrow 3x = 3600 \Rightarrow x = ₹1200$$

32. (d) Cost price of TV when discount is not offered

$$= 11250\times\frac{100}{90} = ₹12500$$

Total cost of TV after transport and installation
$= 12500+800+150 = 13450$
To earn 15% profit, he must sell at

$$13450\times\frac{115}{100} = ₹15467.50$$

33. (c) CP for Karthik $= 10500\times\frac{100}{140} = 7500$

$$\therefore \text{CP for Prathik} = 7500\times\frac{100}{120} = ₹6250$$

34. (c) C.P. of article $= 5220\times\frac{100}{(100-42)}$

$$= \frac{5220\times 100}{58} = ₹9000$$

$$\therefore \text{Required S.P.} = \frac{9000\times 142}{100} = ₹12780$$

35. (c) Let the cost price of manufactures is = P

$$\text{Selling price of manufacturer} = P+P\times\frac{18}{100} = \frac{59P}{50}$$

$$\text{Wholesaler selling price} = \frac{59P}{50}+\frac{59P}{50}\times\frac{20}{100}$$

$$= \frac{59P}{50}+\frac{59P}{250} = \frac{354P}{250}$$

$$\text{Retailer selling price} = \frac{354P}{250}+\frac{354P}{250}\times\frac{25}{100}$$

$$= \frac{354P}{250}+\frac{177P}{500} = \frac{805P}{500}$$

Now, $\frac{805P}{500} = 30.09$

$\Rightarrow P = 17$

Shortcut

$$P = \left(\frac{100}{118}\times\frac{100}{120}\times\frac{100}{125}\times 30.09\right) = 17$$

36. (e) Let the cost price of the articles be ₹ 100.
to earn a profit of 30% he labelled them ₹ 130.
After giving a discount of 10% the selling price of the articles $= 0.9\times 130 = 117$
So, actual profit percent

$$= \frac{(117-100)}{100}\times 100 = 17\%$$

37. (b) Let the cost price of the article be ₹ x

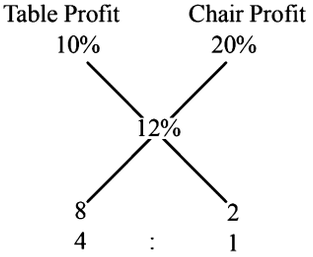
$$\text{After 20\% profit} \Rightarrow \frac{120x}{100} = 3600$$

$x = 3000$
Now, profit percentage, when the article is sold for ₹3150

$$= \frac{3150-3000}{3000}\times 100-\frac{150}{3000}\times 100 = 5\%$$

38. (a) $\text{Overall profit} = \frac{120}{1000}\times 100\% = 12\%$

$\therefore$ by method of alligation—



$\therefore$ In ₹1000

$$\text{Price of 4 tables} = \frac{4}{4+1}\times 1000 = ₹800$$

$\therefore$ Price of 1 table = ₹200

39. (b) $x + y + \frac{xy}{100} = +20 - 20 - \frac{20 \times 20}{100} = -4\%$

Total selling price of a refrigerator and a camera
$= 12000 + 12000 = ₹24000$
Now, loss is 4%

$CP \times \frac{96}{100} = 24000$

$CP = ₹25000$

Loss amount $= (25000 - 24000) = ₹1000$

Alternate Method:

When items are sold at same price and percentage of profit & loss is same, then loss occurred is always—

$\left(\frac{\text{Common loss or gain}}{10}\right)$

$= \left(\frac{20}{10}\right)^2 = 4\%$ loss

$= 1000$ ₹ (for 25000)

40. (c) $15 \times CP = 20 \times SP$

$\Rightarrow \frac{SP}{CP} = \frac{15}{20}$

$\frac{SP}{CP} - 1 = \frac{15}{20} - 1$

$\Rightarrow \frac{SP - CP}{CP} = \frac{15 - 20}{20}$

$= \text{Loss} = \frac{5}{20}$

Loss percentage $= \frac{5}{20} \times 100 = 25\%$

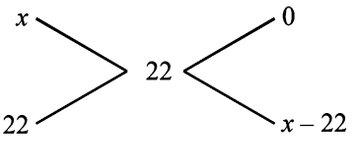
41. (b) Let cost price of milk ₹ x per kg.
Price of 15kg of milk $= ₹ 15x$.
Now, mix 3kg of water, therefore quantity of mixture $= (15 + 3)\text{ kg} = 18\text{ kg}$
So, price of mixture is ₹22 per kg
According to question.
$15x = 22 \times 18$

$x = \frac{22 \times 18}{15} = \frac{132}{5} = 26.40$

Alternate Method:

Let CP of milk be ₹ x per kg.
By Alligation method

price of milk price of water



$\therefore \quad 22 : (x - 22) = 15 : 3$

$\Rightarrow \quad \frac{22}{x - 22} = \frac{15}{3}$

$\Rightarrow \quad \frac{22}{x - 22} = 5$

$\Rightarrow \quad 22 = 5x - 110$

$\Rightarrow \quad 22 = 132$

$\therefore \quad x = ₹26.40$

42. (d) Given marked price of machine $= ₹18000$

$\therefore$ Discount $= \frac{20}{100} \times 18000 = ₹3600$

$\therefore$ SP $= 18000 - 3600 = ₹14400$
If loss of 4%, then

$CP = \frac{100 \times SP}{100 - r} = \frac{100 \times 14400}{100 - 4}$

$= \frac{100 \times 14400}{96} = ₹15000$

43. (b) According to the question,

$\Rightarrow \quad 25 \times \left(\frac{100 - x}{100}\right)\left(\frac{100 - x}{100}\right) = 20.25$

$\Rightarrow \quad (100 - x)^2 = \frac{202500}{25} \Rightarrow (100 - x)^2 = 8100$

$\Rightarrow \quad 100 - x = 90$

$\therefore \quad x = 10$

Alternate Solution:
2 Successive discounts of $x\%$

$= \left(x + x - \frac{x^2}{100}\right)\%$

Here discount $\% = \frac{4.75}{25} = 19\%$

$\therefore$ From option we can say
$x = 10$, to make total discount of 19%

44. (d) Let the C.P. of the article be ₹ x.
According to the question,
$878 - x = x - 636$
$\Rightarrow 2x = 878 + 636 = 1514$

$\Rightarrow x = \frac{1514}{2} = ₹757$

45. (b) Let the cost price of the item be 100.

$100 \xrightarrow{40\%\uparrow} 140 \xrightarrow{20\%\downarrow} 112 \xrightarrow{25\%\downarrow} 84$

CP MP SP

$\therefore$ Loss = 16% and Loss = ₹ 448

$\therefore \quad CP = \frac{448 \times 100}{16} = ₹2800$

$\therefore \quad SP = \frac{2800 \times 84}{100} = ₹2352$

46. (d) He bought the article for
$[(100 - 25)/100]\,[(100 - 10)/100] \times 18000 = 12{,}150$
Spent 1350 on repairs,
Total CP $= 1350 + 12150 = 13{,}500$

SP = 15,000

So profit% $= \frac{1500}{13500} \times 100 = 11\frac{1}{9}\%$

47. (b) $\frac{(CP - SP)}{SP} = \frac{10}{100}$

10 CP = 11 SP, now let CP = 1

So CP of 11 items = 11 and SP = 10,

Loss percent $= \left(\frac{11-10}{11} \times 100\right)\% = \frac{100}{11}\%$

48. (c) 1/3rd at 12% loss $= \frac{900}{3} = 300 \times \frac{88}{100} = 264$

$900 \times 18/100 = 162 \Rightarrow 600 + 162 + 36 = 798$

$\frac{198}{600} \times 100 = 33\%$

49. (b) Profit = 5%

5% of CP = ₹ 50

CP = ₹ 1000

Now, Loss% = 10%

Loss = ₹ 100

Required % $= \frac{100}{50} \times 100 = 200\%$

50. (c) When same quantity is sell at same price and percent gain and loss is same then there is always loss occurred.

To calculate the loss percent $= \left(\frac{\text{common loss or gain}}{10}\right)^2$

i.e. $\left(\frac{25}{10}\right)^2 = 6.25\%$ loss

51. (b) MP $\times \frac{80}{100} \times \frac{65}{100} = 1300$

$MP = \frac{1300 \times 100 \times 100}{80 \times 65} = 2500$

52. (b) Let C. P. = 100

$\therefore$ M.P. = 140

And S.P. $= \frac{100 - x}{100} \times 140$

Also, S.P. $= \frac{112}{100} \times 100 = 112$

$\therefore \quad \frac{100 - x}{100} \times 140 = 112$

$\Rightarrow \quad x = 20$

Now, C.P. = 120, Profit = x% i.e. 20%

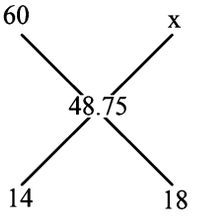
$\therefore$ S.P. $= \frac{120}{100} \times 120 =$ ₹144

53. (c) Let cost price of mixture = y

So, $\frac{4}{3}y = 65$

$y = 48.75$

From mixture and allegation



$\frac{7}{9} = \frac{x - 48.75}{48.75 - 60}$

$341.25 - 420 = 9x - 438.75$

$360 = 9x$

$x = 40$ ₹/kg

54. (a) Let C.P. of A = x

So C.P. of B = 200 + x

According to question

$\frac{\frac{110}{100}(x + 200)}{\frac{60}{100}x} = \frac{11}{4} \Rightarrow \frac{x + 200}{6x} = \frac{1}{4}$

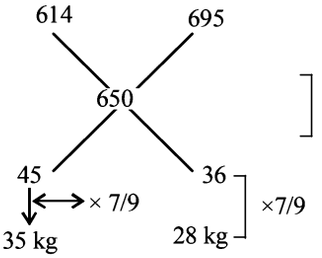
x = 400

If it is sold at 20% loss then selling price

$= \frac{80}{100} \times 400 = 320$

55. (b) According to question,

A (milk powder) B (milk powder)



[CP of 1 kg milk powder $\frac{767 \times 100}{118} = 650$]

So, answer is 28 kg.

56. (e) According to question,

MP = 1600 + CP ...(i)

$MP - 500 = \frac{125}{100} \times CP$

$MP = \frac{5}{4}CP + 500$

4 MP = 5 CP + 2000 ...(ii)

Solving (i) and (ii),

CP = 4400

Required selling price $= \frac{130}{100} \times 4400 = 5720$

57. (b) Let M.P. = x

And cost price and selling price be 5y and 6y

So, 80% x = 6 y

$x = \frac{30y}{4} \Rightarrow x = 7.5\,y$

Required percentage $= \frac{7.5y - 5y}{5y} \times 100$

$= \frac{2.5y}{5y} \times 100 = 50\%$

58. (d) Let the price of B per kg ₹ x. Then, the price of A per kg = ₹ 3x

1 kg of C contains 2/7 kg of A and 5/7 kg of B

Price of 1 kg of C = (2/7) × 3x + (5/7)x = (11 / 7)x

By the given condition, 11x / 7

= 5.20 – 0.80 = ₹ 4.40

⇒ x = 4.40 × (7/11) = ₹ 2.80

Hence the price of B per kg = ₹ 2.80.

59. (a) C.P. of car $= \frac{90}{100} \times 4,50,000 = ₹\ 4,05,000$

C.P. of scooter $= \frac{1}{10} \times 4,05,000 = ₹\ 40,500$

MP of scooter = ₹ 50,625

C.P. of car and scooter = 4,05,000 + 40,500

= 4,45,500

S.P of car and scooter

$= \frac{130}{100} \times 4,45,500 = ₹\ 5,79,150$

S.P of car $= 5,79,150 - \frac{110}{100} \times 40,500$

= 5,79, 150 – 44,500 = 5,34,600

Required ratio $= \frac{50,625}{5,34,600} = \frac{25}{264}$

60. (a) Let $CP_1 = 100$ $CP_2 = 100$

overall CP = 200

$SP_1 = 115$;

overall SP = 240

SP_2 = overall; SP – SP1 = 240 – 115 = 125

Difference in SP = 125–115= 10

Therefore CP = 4800 × 100/10 = ₹ 48000.

Alternate Solution:

As price of both books is same one is sold at 15% so other must be sold at 25% to make overall profit of 20%

∵ 10% = 4800

∴ 100% = 48000

Price of 1 book = 48000

61. (d) Suppose MP = 100

Then CP = 100 × 80/100= 80

According to question

Half the goods at MP= 100/2= 50

One quarter = 100/4 = 25 at 10% discount

= 25 × 90/100= 22.5

And rest = 100–50–25= 25 at 30% discount

= 25 × 70/100 = 17.5

Total sold = 50+22.5+17.5=90

Gain% = (90 – 80) × 100/80 = 12.5%.

Alternate Solution:

Let total products were 12, and MP = ₹100 (Let)

∴ CP = ₹80

Then profit earned

= 20 × 6 + 3 × 10 + 3 × (–10)

- 20 × 6: By selling half stock
- 3 × 10: By selling $\frac{1}{4}^{th}$ stock at 10% discount
- 3 × (–10): By selling remaining stock at 30% discount

∴ Profit = 20 × 6

∴ Profit % $= \frac{20 \times 6}{80 \times 12} \times 100 = 12.5\%$

62. (b) Profit share ratio of P & Q

$6000 \times x$: 8000×9

x : 12

ATQ,

$\frac{x}{12} = \frac{18000}{24000}$

⇒ x = 9 months.

63. (a) Let the CP be ₹100x

Then, MP = ₹160x

SP = $160x \times \frac{70}{100}$ = ₹ 112x

Profits = ₹12x

New MP = ₹180x

New SP = $180x \times \frac{70}{100}$ = ₹126x

New profit = ₹26x

Required % = $\frac{12x}{26x} \times 100 \approx 46\%$

64. (b) Let the investment of Q be ₹x

∴ investment of P = ₹3x

Ratio of profit,

P	:	Q	:	R
12 × 3x		12 × x		9 × y

ATQ,

36x = 9y

y = 4x

∴ Required percentage = $\frac{12 \times x}{9 \times 4x} \times 100$

$= 33\frac{1}{3}\%$

65. (c) Let cost price of article = 100*x*

ATQ

32*x* – 18*x* = 112

14*x* = 112

x = 8

Cost price of article = 8 × 100 = 800

Selling price to earn 25% profit = $800 \times \frac{125}{100} = 1000$

66. (c) Let CP = 100 & MP = 150
From A
If profit = 60%
Hence no discount is possible here so, it does not satisfy equation
From B
When profit is 20% then discount will be

$$\frac{30}{150} \times 100 = 20\%$$

When it doubles i.e. discount = 40%

$$\text{Then, SP} = 150 - \frac{40}{100} \times 150 = 90$$

So, it gave loss of 10% not possible.
From C
When profit = 38%

$$\text{Then discount} = \frac{12}{150} \times 100 = 8\%$$

When it doubles = 16%

$$\text{Then SP} = 150 - \frac{16}{100} \times 150 = 126$$

So, profit is 26%
So, option C is possible.
From D
When profit = 35%

$$\text{Discount} = \frac{15}{150} \times 100 = 10\%$$

When discount gets doubled = 20%

$$\text{SP} = 150 - \frac{20}{100} \times 150 = 120$$

So profit is 20%, hence possible.
From E
When profit = 41%

$$\text{then discount} = \frac{9}{150} \times 100 = 6\%$$

When discount = 12%

$$\text{SP} = 150 - \frac{12}{100} \times 150 = 132$$

Profit is 32%
So, it is possible.
Then C, D and E values are possible.

67. (b) Let marked price of Piano XX and YY be 400x and 500x respectively
ATQ—

$$400x \times \frac{(100-d)}{100} = 500x \times \frac{(100-d-18)}{100}$$

$400 - 4d = 410 - 5d$
$d = 10\%$

$$\text{Cost price of Piano XX} = \frac{400x \times \frac{90}{100}}{120} \times 100$$

$= ₹300x$

$$\text{Cost price of Piano YY} = \frac{500x \times \frac{(100-28)}{100}}{125} \times 100$$

$= ₹288x$
ATQ,

$$(500x \times \frac{72}{100} - 288x) - (400x \times \frac{90}{100} - 300x) = 384$$

$72x - 60x = 384$
$x = 32$
Cost price of Piano XX = $32 \times 300 = ₹9600$
Cost price of Piano YY = $32 \times 288 = ₹9216$

68. (d) $\text{Cost price of both books} = (600 \times 2) \times \frac{100}{93.75} = ₹1280$
Let profit percentage and loss percentage earned on both books at x%.
According to question,

$$600 \times \frac{100}{100+x} + 600 \times \frac{100}{100-x} = 1280$$

$$\Rightarrow \frac{60000}{100+x} + \frac{60000}{100-x} = 1280$$

$$60000 \times \frac{200}{(100)^2 - x^2} = 1280$$

$$\Rightarrow \frac{600000}{10000 - x^2} = 64$$

$\Rightarrow 640000 - 64x^2 = 600000$
$64x^2 = 40000$
$\therefore x = 25$
Required difference

$$= 600 \times \frac{100}{100-25} - 600 \times \frac{100}{100+25}$$

$$= \frac{600 \times 100}{75} - \frac{600 \times 100}{125}$$

$= 800 - 480 = ₹320$

69. (a) Let the selling price for each of the shopkeeper be ₹ 100x
For 1st shopkeeper
SP = ₹ 100x

$$\text{CP} = 100x \times \frac{75}{100} = ₹\ 75x$$

For 2nd shopkeeper
SP = ₹ 100x

$$\text{CP} = 100x \times \frac{100}{125} = ₹\ 80x$$

ATQ,
$\Rightarrow 25x - 20x = ₹\ 175$
$\Rightarrow x = 35$
Sum of cost price = ₹ 5425

70. (d) Let cost price of each bread packet = ₹ a
So, marked price of each bread packet = 2.5a
And selling price of each bread packet

$$= 2.5a \times \frac{60}{100} = 1.5a$$

Given, $1.5a - a = 30$

$a = ₹\ 60$

New selling price $= 2.5a \times \frac{5}{8} = 1.5625a$

Selling price of one bread packet

$= 1.5625 \times 60 = 93.75$

Required profit on selling 80 bread packets

$= (93.75 - 60) \times 75 = ₹\ 2531.25.$

71. (b) Rohan : Sohan : Ghanshyam

$= [(1600 \times 4 + 1100 \times 8) : (1200 \times 4 + 1700 \times 8) : (4 \times 2100)$

$= (6400 + 8800) : (4800 + 13600) : (8400)$

$= (15200 : 18400 : 8400)$

$= 38 : 46 : 21$

Share of Sohan

$= \frac{46}{105} \times 2640 = ₹ 1156.6$

Share of Ghanshyam

$= \frac{21}{105} \times 2640 = ₹ 528$

Difference between share of Sohan and Ghanshyam

$= 1156.6 - 528 = ₹ 628.6$

72. (b) Cost price for retailer $= 80 \times \frac{100}{125} = 64$

Cost price for manufacturer $= 64 \times \frac{100}{125} \times \frac{100}{123} = ₹ 41.6$

73. (b) Total selling price $= 720 \times 8000 = 5760000$

Total no. of Mobiles manufactures $= 720 \times \frac{10}{9} = 800$

Total cost price of Mobiles $= 5760000 \times \frac{100}{125}$

$= 4608000$

Cost of each Mobile $= \frac{4608000}{800} = ₹ 5760$

74. (b) Let the profit earned on second Beg be x%

Using allegation method,

10		x
	13	
(x – 13)		3
1	:	1.....(ratio of cost price)

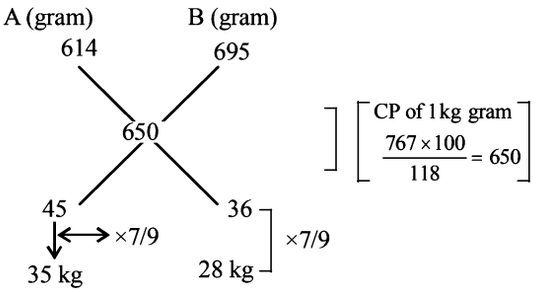
$\Rightarrow$ x = 16%

According to the question,

3% = ₹ 90

So, cost price = 100% = ₹ 3000

75. (b) According to question,



So, answer is 28 kg.

76. (a) Ratio of their profit sharing

Raj : Shikha : Dixit $= 7 \times 3 : 8 \times 12 : 5 \times 7$

$= 21 : 96 : 35$

Annual profit = 91200

Difference b/w Raj and Dixit's share of profit

$\frac{14}{152} \times 91200$

$= ₹\ 8400$

77. (a) Let SP of both bycycle

ATQ,

	bycycle 1		bycycle 2		
CP	$6x$	$\times \frac{3}{4}$	$4x$	$\times \frac{1}{2}$	= 10
SP	$8x$		$8x$		= 16

Profit % $= \frac{16x - 10x}{10x} \times 100 = 60\%$

78. (a) Contribution of Vijay and Ajay = 1/4 × 1/2 : 1/5 × 1/4

= 1/8 : 1/20

Contribution of Sanjay = 1 – (1/4 + 1/5) = 11/20

Share of Vijay, Ajay and Sanjay = 1/8 : 1/20 : 11/20

on solving we get Ratio of profit sharing = 5 : 2 : 22

Profit share of Ajay and Sanjay

$= 17{,}400 \times (2 + 22) / 29 =$ **14,400**

79. (c) Let CP $= 100x$

$\therefore$ marked price $= 160x$

$\therefore$ selling price after giving discount $= 128x$

$\Rightarrow 28x = 210$

$x = 7.5$

$\therefore$ CP = ₹ 750

80. (b) Let the selling price be $200x$.

Then, profit $= 100x$

C.P. $= 200x - 100x = 100x$

Now, new C.P. $= 100x \times \frac{160}{100} = 160x$

S.P. $= 200x$

New profit $= 200x - 160x = 40x$

Required % $= \frac{100x - 40x}{200x} = \frac{60}{200} \times 100 = 30\%$

81. (b) Let the cost price be ₹ $3x$.

Then the marked price = ₹ $4x$

And let the discount given be ₹ $4y$

Then loss incurred = ₹ y

ATQ,

$\Rightarrow 3x - y = 4x - 4y$

$\Rightarrow x = 3y$

Marked price $= 4 \times 3y = 12y$

Required discount % $= \frac{4y}{12y} \times 100 = 33\frac{1}{3}\%$

82. (a) Let x be the cost price of article P

Cost price of article Q $= 10000 - x$

First case

Profit from P = 15% C.P $= 0.15x$

Profit from Q = 20% C.P $= 0.2\,(10000 - x) = 2000 - 0.2x$

Total profit $= .15x + 2000 - 0.2x = 2000 - 0.05x$

Second case

Profit from P = 20% of C.P $= 0.2x$

Profit from Q = 15% of C.P $= 0.15 \times (10000 - x)$

$= 1500 - 0.15x$

Total profit $= 0.2x + 1500 - 0.15x = 1500 + 0.05x$

By data,

$1500 + 0.05x = 2000 - 0.05x + 200 \Rightarrow 0.1x = 700$

$x = 7000$

Cost Price of article = 7000

if selling price = 6000

Loss percent $= \frac{(7000 - 6000)}{7000} \times 100 = 14.28\%$ (loss)

83. (b) Let the marked price be ₹ $100x$.

Then selling price = ₹ $85x$

Cost price $= 85x \times \frac{100}{127.5}$

Cost price = ₹ $\frac{200}{3}x$

ATQ,

$100x - \frac{200}{3}x = 500$

$x = 15$

Cost price = ₹ 1000

84. (c) SP of book $= 900 \times \frac{4}{3} =$ ₹ 1200.

MRP of the book $= \frac{100}{80} \times 1200 =$ ₹ 1500

Discount given on the book = 1500 – 1200 = ₹ 300

85. (a) Let amount invested by A & B be ₹3x & ₹ 2x respectively.

Profit sharing ratio of A to B $= (3x \times 9) : (2x \times 9) = 3:2$

Profit share of B $= \frac{2}{5} \times 15000 =$ ₹ 6000