Concept 16

Profit & Loss

Concept 16 (Profit & Loss)

- ⊗ Profit = Selling Price – Cost
  Loss = Cost – Selling Price
- ⊗ **Always remember, Profit or loss is always calculated on the cost**
  If an item is sold at 20% profit, it is sold at 120% of cost
  If an item is sold at 20% loss, it is sold at 80% of cost
- ⊗ **Marking up/down means raising/lowering the selling price. It is always calculated on selling price.**
  If an item is marked up by 20%, its selling price is 120% of previous selling price
  If an item is marked down by 20%, its selling price is 80% of previous selling price

- ⊗ 100% of cost is cost itself. It's obvious isn't it? But, keeping it in mind makes life easier. Let me show you how.
  Suppose a book was sold at 20% profit and profit was 40 tk.
  So, 20% of cost = 40
  100% of cost = 200.
  The cost of the book was 200.
- ⊗ **Discount is calculated on selling price**
  If an item is sold at 20% discount, it is sold at 20% of the previous selling price

Example 1: A bicycle originally cost $ 100 and was discounted 10%. After three months it was sold after being discounted another 15%. How much was the bicycle sold for?

A) $76.50 B) $75.00 C) $73.50 D) $71.00 E) $69.50

Solution:

Original price = $100

10% discounted price = $90

The bicycle was sold after another15% discount. Meaning, the bicycle was sold at 85% of the discounted price. Selling price = $90 × 85% = $76.50

Answer: (A)

Example 2: A certain radio costs a shopkeeper Tk. 64, At what price must he sell it if he is to make a profit of 20% on the selling price?

A. Tk. 12.80 B. Tk. 76.80 C. Tk. 78,00 D. Tk. 80.00 E. Tk. 84.00

Solution:

Cost = 64; at 20% proit, selling price is 120% of cost.

Selling Price = 64 × 120% = 76.80 taka.

Answer: (B)

Exercise 16

□ 1. A certain radio costs a shopkeeper Tk. 64, At what price must he sell it if he is to make a profit of 20% on the selling price? (BBA 93)
(A) Tk. 12.80 (B) Tk. 76.80 (C) Tk. 78,00 (D) Tk. 80.00 (E) Tk. 84.00

□ 2. A trader incurs a loss of 10% on cost ofl an item on selling it. If he could sell it at Tk. 1,500 more, he could make a profit of 20% on cost. What was the cost of the item in thousand Taka? (BBA 94-95)
(A) 7.5 (B) 6 (C) 5 (D) 4.5 (E) 8

□ 3. A bicycle originally cost $ 100 and was discounted 10%. After three months it was sold after being discounted another 15%. How much was the bicycle sold for? (BBA 94-95)
(A) $76.50 (B) $75.00 (C) $73.50 (D) $71.00 (E) $69.50

□ 4. A trader incurs a loss of 10% from selling an item. If the selling price was Tk. 200 more, he would have made a profit of 15%. What was the cost of the item? (BBA 02-03)
(A) 800 (B) 720 (C) 1200 (D) 900 (E) None of these

□ 5. A man made a loss of 20% on his cost by selling a pen at taka 200. What should be his selling price in taka if he wants to make a profit of 10% on cost? (BBA 98-99)
(A) 250 (B) 275 (C) 300 (D) 225 (E) None of these

□ 6. Asif purchased a radio from a store and sold it to Rahman and made a profit of 20%. After few months Rahman sold the same radio to Fahad and incurred a loss of 15%. If Fahad bought the Radio for Tk. 510 what was the original price of the radio? (BBA 03-04)
(A) 425 (B) 450 (C) 475 (D) 500 (E) None of these

□ 7. A manufacturer of TV wants to make a profit of Tk. 3,00,000 on sale of 200 TV sets. It costs Tk. 10,000 each to make the first 100 TV sets and Tk. 7,500 each to make TV sets after the first 100 sets. What should be the selling price of each TV sets in taka? (BBA 03-04)
(A) 10,250 (B) 10,350 (C) 10,500 (D) 10,750 (E) None of these

□ 8. If the price of a product is increased by 15% then the seller would get Tk 450 more. If instead, the price were increased by 10% then how much more would he get? (BBA 04-05)
(A) 150 (B) 200 (C) 300 (D) 325 (E) None of these

□ 9. An article sells at Tk. 60. This price gives a retailer a profit of 20% on its cost. What will be the new retail price, in tk., if he cuts his profit to 12% of the cost? (MBA 98-99)
(A) 50 (B) 45 (C) 56 (D) 50.50 (E) 55

□10. 5% merchandise of a trader was stolen and another 5% was damaged during transportation. At what profit (in %) should he sell the rest of the goods so that he can make an overall profit of 20%? (MBA 99-00)
(A) 22.25% (B) 27.5% (C) 30% (D) 33.3% (E) None of these

□11. During summer, a store offers 10% discount on some items. But due to a defect, an additional 5% was discounted from the discount price for a particular item. If the list price of the item was Tk. 400, what was the discounted price? (MBA 99-00)
(A) 338 (B) 340 (C) 342 (D) 345.50 (E) None of these

□12. A T-shirt marked Tk. 48 is offered at a discount of 25% during Eid sale. At this reduced price the shopkeeper makes a profit of 20% on the cost. The cost to the shopkeeper is (MBA 00-01)
(A) Tk. 29 (B) Tk. 30 (C) Tk. 32 (D) Tk. 36 (E) Tk. 40

⊕13. You buy equal number of two types of chocolates at the rate of Tk. $^1/_9$ and Tk $^1/_{11}$ respectively. If you now sell them at the rate of Tk. $^1/_{10}$ what will be your profit/loss? (BBA 96-97)
(A) 2% loss (B) 2% profit (C) 0 (D) 1% loss (E) 1% Profit

⊕14 X sells an item to Y at a profit of 28% on his cost and Y sells the same item to Z at a loss of 25% on his cost. If Y has thus sold the item to Z at Tk. 2 less than the cost of the item to X, what is the cost of the item to X in Taka? (BBA 94-95)
(A) 100 (B) 50 (C) 200 (D) 150 (E) 250

⊕15. In making a Radio set, the cost of labour and materials are in the ratio of 3:2. A manufacturer sells a set for Tk. 150 to make a gain of 25% on the cost. What is the cost of the materials for the set? (BBA 94-95)
(A) Tk. 72 (B) Tk. 60 (C) Tk. 54 (D) Tk. 48 (E) Tk. 40

⊕16. Mr. Karim bought 20 mangoes for Tk 55. He found that 10% of the mangoes were damaged and sold the rest at the rate of Taka 54 per dozen. How much profit in Taka did he make? (BBA 98-99)
(A) 28 (B) 26 (C) 24 (D) 20 (E) None of these

⊕17. A trader purchases some pen at the rate of Tk. 10 per dozen. If he sells all the pen at a rate of Tk. 120 per hundred pen. What will be his profit in percent? (BBA 00-01)
(A) 33.33 (B) 44 (C) 45 (D) 48 (E) None of these

⊕18. The manager of Agora purchased some tomatoes for Tk. 45 per kg. Due to improper handling, 10% of the tomatoes, by weight, were ruined and discarded. At what price per kg should the manager sell the remaining tomatoes if he wishes to make a profit of 12 percent on the cost of the tomatoes? (BBA 04-05)
(A) 52 (B) 54 (C) 56 (D) 58 (E) None of these

⊕19. A merchant was selling an item at a certain price, then marked it down 20% for a spring sale. During the summer, he marked the item down another 20% from its spring price. If the item is sold at the summer price, then what percent of the original price did it sell for? (BBA 06-07)

(A) 40% (B) 60% (C) 64% (D) 67% (E) None of these

⊕20. When the per unit production cost of an item is Tk. 80 and other costs per unit is Tk. 20, the producer makes a profit of 15% on his total cost. If the production cost decreases by 20% and the selling price remains the same, calculate the profit in Tk. (BBA 07-08)

(A) 31 (B) 34 (C) 35 (D) 43 (E) None of these

⊕21. A shopkeeper marks an article at such a price that after allowing a discount of 30% on the tag price (including tax) he makes a profit of 40%. If the tag price of the article including tax is Tk. 460, then the cost price of that article is - (BBA 09-10)

(A) 232 (B) 260 (C) 230 (D) 330 (E) 322

⊕22. The potato traders have increased the original price of potatoes by 20% by creating a false shortage of supply. Govt. intervened into the scene and forced the traders to reduce their price by 20% of new price and stick to that. Currently the traders are selling potatoes with a loss/gain of what percentage over the original price? (BBA 09-10)

(A) 4% loss (B) 4% gain (C) 5.5% gain (D) 6% loss (E) Neither gain nor loss

⊕23. Hasan purchased 3 products: 100 units of product A @ Tk. x per unit; 300 units of product B @ Tk. 2x per unit and 600 units of product C @ Tk. 3x per unit. If he wants to make a profit of 20%, he should sell these products at an average price of (MBA 96-97)

(A) 2.4x (B) 2x (C) 3x (D) 2.2x (E) None of these

⊕24. A pen was sold at 10% loss. If the selling price was Tk. 6 more, then the seller could have made a profit of 5%. What was the purchase price of the pen? (MBA 98-99)

(A) 45 (B) 40 (C) 30 (D) 25 (E) None of these

⊕25. A trader, while selling a pen, was asking for such a price that will enable him to offer a 10% discount and still make a profit of 20% on cost. If the cost of the pen was Tk. 30, what was his asking price? (MBA 98-99)

(A) 42 (B) 40 (C) 36 (D) 32 (E) None of these

⊕26. An item was sold at 6% profit. If the cost was 4% less and the selling price was Tk. 4 more, then the trader would have made a profit of 12.5%. What was the cost of the item? (MBA 99-00)

(A) 100 (B) 120 (C) 150 (D) 200 (E) None of these

⊕27. A trader buys eggs for Tk. M per dozen and sells them for Tk. M/6 per piece. What is his profit? (MBA 01-02)

(A) 20% (B) 50% (C) 60% (D) 100% (E) none of these

⊕28. A person bought an article and sold it at a loss of 10%. If he had bought it for 20% less and sold it for Tk. 55 more, he would have made a profit of 40%. What was the cost of the article taka? (MBA 07-08)

(A) 350 (B) 300 (C) 250 (D) 150 (E) None of these

⊕29. A wholesaler bought 2100 MBA admission guide books for taka 20 each. The wholesaler sold 50 percent of the books for taka 35 each and the rest for taka 18 each. What was the wholesaler's average profit per book? (MBA 09-10)

(A) taka 6.5 (B) taka13 (C) taka 7 (D) taka 5 (E) taka 3.33

∇30. The retail price of a pen is 40 taka. Asif got a discount of 20% over the retail price and he eventually saved taka 240 on his total purchase of the pens. How many pens did he buy?

(MBA 09-10)

(A) 20 (B) 24 (C) 12 (D) 30 (E) None of these

∇31. A trader normally makes a profit of 40% on items he sells. If he reduces the price by 10%, his sales increase by 40%. Let x be the total profit when he does not reduce the price, and y the total profit when he reduces the price. What is the ratio of y to x?

(BBA 02-03)

(A) 1.28 (B) 7.8 (C) 1.11 (D). 91 (E) None of these

∇32. The cost of 1 dozen apples and 1 dozen mangoes is Tk. 100 and Tk. 120 respectively. If you spend equal amounts of money to buy apples and mangoes and sell them both at Tk. 110 per dozen, what will be your approximate profit or loss? (BBA 02-03)

(A) 2% profit (B) 2% loss (C) 0 (D) 1% profit (E) 1% loss

∇33. A shirt was sold at 6% profit. If the purchase price were 4% less and the selling price were tk.4 more, the profit would be 12.5%. What was the purchase price of the shirt?

(MBA 96-97)

(A) 240 (B) 220 (C) 200 (D) 180 (E) None of these

∇34. If you buy equal amount of two types of chocolates at the rate of tk. 1/4 and tk. 1/6 respectively and sell all of them at the rate of tk. 1/5, what will be your profit/loss?

(MBA 96-97)

(A) 1% loss (B) 2% profit (C) 2% loss (D) 4% profit (E) 4% loss

∇35. Two years ago, the cost of pen A was Tk. 70 more than that of pen B. But due to high demand, the cost of pen A has increased by 100% and that of pen B has increased by Tk. 20. If today you need a total of Tk. 250 to buy one pen of each type, what was the price in Taka of pen B two years ago? (MBA 00-01)

(A) 30 (B) 40 (C) 50 (D) 70 (E) None of these

∇36. The price for a TV is 120% of its cost. The TV was sold at a 10% discount on the price. If the profit is Tk. 2,400, what is the cost of the TV in taka? (MBA 02-03)
(A) 24,000 (B) 27,500 (C) 30,000 (D) 32,000 (E) None of these

∇37. A shop sold a pair of shoes for Tk. 1600.00 and a pair of sandals for Tk. 960.00. It made a profit of 20% on shoes and took a 10% loss on sandals. The shop made a (MBA 03-04)
(A) loss of 17.8% (B) loss of 15.0% (C) gain of 17.8%
(D) gain of 75.3% (E) None of these

∇38. In the official exchange, ratio of French Francs to US Dollars is 350:1 and the free exchange ratio is 400:1 how much profit would a man make if he could convert $ 70 to francs at the free rate and then convert these back to dollars at the official rate? (MBA 05-06)
(A) $ 1 (B) $ 10 (C) $ 61.25 (D) $ 70 (E) $ 80

∇39. A man buys eggs at the rate of Tk 35 per 100 pieces and sells them at Tk 7.20 per dozen. If the profit is Tk 30, how many eggs did he buy? (MBA 08-09)
(A) 60 (B) 120 (C) 180 (D) 210 (E) none of these

∇40. A merchant buys two articles for Taka 1400 `He sells one of them at a profit of 20% and the other at a loss of 8%. He makes no profit or loss in the end. What is the selling price of the article that he sold at a loss? (MBA 08-09)
(A) 1000 (B) 1200 (C) 800 (D) 900 (E) none of these

∇41. A trader makes a loss of 10% by selling a chair at a discount of 28% on the listed price. What will be his profit/loss if he sells the chair at 90% of its listed price? (MBA 2013)
(A) 10% (B) 12.5% (C) 13.6% (D) 15% (E) none of these

□42. For an item the profit is 40% when the discount is 30%.What is the profit when the discount is 40%? (BBA 14-15)
(A) 10% (B) 20% (C) 25% (D) 30% (E) none of these

⊕43. Bashir bought an ordinary mobile and a cover for Tk, 2000. Malek bought a smart phone and the same cover for Tk. 2000 more than what Bashir had paid. The price of the cover was one tenth of the combined cost of the two mobiles. What was the cost of the ordinary mobile? (BBA 14-15)
(A)Tk. 1000 (B) Tk. 1200 (C) Tk. 1500 (D) Tk. 1600 (E) none of these

∇44. A customer came to a shop and asked the shop manager to give a 20% discount on listed price of a pen. Moreover, for every 10 pens purchased he wanted two pens free of cost. The manager agreed to the customer's demand because he could still make a profit of 20% on cost price. If the cost price of a pen is x, what was the list price of the pen? (BBA 14-15)
(A)1.75x (B)1.8x (C)1.9x (D) 2x (E) none of these

□45. The total income of Mr. Teng in the years 2003, 2004, and 2005 was BDT 36,400. His income had increased by 20% each year. What was his income (BDT) in 2005? (BBA 15-16)

(A) 5,600 (B) 8,800 (C) 12,000 (D) 14,000 (E) none of these

□46. Nipu sold 100 pens, of which 50 are red and 50 are black, at Tk. 48 per pen. He made a profit of 20% on the black pens and made a loss of 20% on the red pens. What was the net gain or net loss on this sale? (BBA 16-17)

(A) 0 (B) Gain of Tk. 200 (C) Loss of Tk. 200
(D) Gain of Tk. 400 (E) none of these

⊕47. The sale of TV increased by 30% when the price was reduced by 10%. What will be the percentage change in revenue? (BBA 16-17)

(A) +14% (B) +15% (C) +17% (D) +18% (E) none of these

⊕48. A TV and a computer have the same price. If the price of the TV goes up by 20% and that of the computer goes down by 10%, how much more will it cost be buy 4 TVs and 4 computer? (BBA 16-17)

(A) 5% (B) 1% (C) 15% (D) 20% (E) none of these

∇49. Johny bought a book and sold it at a loss of 10%. If he had bought it for 20% less and sold it for Tk 55 more, he would have made a profit of 40%, What was the cost of the book? (BBA 17-18)

A) Tk 150 B) Tk 250 C) Tk 350 D) Tk 450 E) None of these

∇ 50. One laptop seller is planning to increase the price/laptop by BDT 10,000 from the next month. Market research shows that with this increase in price he will be able to sell 6 fewer laptops in the next month but the total revenue will increase by BDT 32,000 to BDT 760,000. What is the number of laptops the seller will sell in the ext month at this new price? (BBA 19-20)

A) 16 B) 20 C) 26 D) 32 E) 36

∇ 51 A wholesaler ordered 120 units of a certain product from its producer. The product would be sold at a price of BDT 500 each which was marked 20% over its initial cost. However, the wholesaler could not sell 12 units of that product which were returned to the producer for a refund of 50% of the wholesaler's initial cost. What was the wholesaler's approximate profit or loss as a percentage of his initial cost for the 120 units? (BBA 19-20)

A) 6% Loss B) 13% Loss C) No loss or profit D) 6% Profit E) 13% Profit

⊕ 52 Arif sold 100 pens, of which 50 are red and 50 are black, at Tk. 48 per pen. He made a profit of 20% on the black pens and made a loss of 20% on the red pens. What was the net gain on this sale in Tk.? (MBA 17)

(A) 0 (B) -50 (C) -100 (D) -200 (E) none of these

⊕ 53 Arif bought a pen at a 30% discount on listed price. Few months later, he found that the price for the same pen has increased by 50% and the discount he got in taka remained the same. How much discount did Arif get in terms of the new listed price? (MBA 17)

(A) 10% (B) 15% (C) 20% (D) 22.5% (E) none of these

□ 54 If selling price is doubled, profit triples. Find the profit in percentage. (MBA 17)
(A) 50 (B) 100 (C) 150 (D) 200 (E) none of these

⊕ 55 The cost prices of two articles, P and Q, are in the ratio 5:7 and their selling prices, in the ratio 2:5, respectively. If the losses made on both the products are the same, what is the ratio between the cost price and the selling price of Q? (MBA 17)
(A) 5:4 (B) 7:3 (C) 8:3 (D) 15:4 (E) none of these

⊕ 56 Babu made a profit of 20% by selling a product. If he had purchased that product for 10% less and sold it at a profit of 40%, he would have received Tk. 24 more. What was his original selling price in taka? (MBA 17)
(A) 400 (B) 480 (C) 520 (D) 600 (E) none of these

⊕57. A salesperson bought an item for Tk. X and marked it up by 50%. However, he could not sell the item during the first quarter and this, decided to provide a discount of 20% on the marked-up price. As the item remained unsold in the second quarter as well, he stated to charge 70% of the discounted value. What is the latest sales price of the item in term of its buying price? (MBA 18-19)
(A) 0.60X (B)0.84X (C)0.96X (D)1.05X (E) None of these

∇ 58. Muib, Rabib, Tarique and Zafar jointly started a business and invested a total of Tk 800,000. If Muib's share increases by Tk 30,000, Rabib's share increases by one-third of his share, Tarique's share decreases by 20% and Zafar's share decreases by Tk 40,000, all of them would have equal amounts of money. What is Zafar's original share in Tk?
A) 202,500 B) 235,000 C) 232,500 D) 237,500 E) 247,500

∇ 59. During a sale, a store sells 20 percent of its remaining stock each day, without replenishment. After four days, what fraction of its original stock has it sold?
A) 1/625 B) 256/625 C) 61/125 D) 64/125 E) 369/625

∇60. By selling 60 oranges at 624 taka , loss is cost price of 8 orange , the cost price of one orange is : (MBA 19-20)
A. 10 B. 10.5 C. 11 D. 11.5 E. none of these

∇61. A seller is giving 20% discount on the listed price and makes 20% profit. What is the % of listed price to its cost price? (MBA 18-19)
A. 110% B. 120% C. 140% D. 150% E. none of these

Answer Key Exercise 16

1. B	2. C	3. A	4. A	5. B	6. D	7. A	8. C	9. C	10. D	11. C
12. B	13. D	14. B	15. D	16. B	17. B	18. C	19. C	20. A	21. C	22. A
23. C	24. B	25. B	26. D	27. D	28. C	29. A	30. D	31. D	32. D	33. C
34. E	35. A	36. C	37. E	38. B	39. B	40. E	41. B	42. B	43. C	44. B
45.E	46.C	47.C	48.A	49.B	50. B	51. E	52. D	53. C	54. B	55. E
56. B	57. B	58. C	59. E	60. E	61. D					

Solution to Exercise 16

1. (B) Cost = 64; at 20% proit, selling price is 120% of cost.
Selling Price = 64 × 120% = 76.80 taka.

2. (C) ধরি, cost = x টাকা ∴ selling price = $x - \frac{x}{10} = \frac{9x}{10}$ টাকা

20% profit করলে selling price = $x + \frac{x}{5} = \frac{6x}{5}$ টাকা

প্রশ্নমতে, $\frac{9x}{10} + 1500 = \frac{6x}{5} \Rightarrow \frac{6x}{5} - \frac{9x}{10} \Rightarrow 1500 \Rightarrow 12x - 9x = 15000 \Rightarrow x = 5000$

∴ Answer C

3. (A) Original price = $100
10% discounted price = $90
The bicycle was sold after another15% discount. Meaning, the bicycle was sold at 85% of the discounted price. Selling price = $90 X 85% = $76.50

4. (A) ধরি, cost = x টাকা
∴ selling price = .9x টাকা (10% loss এ)
যদি selling price (.9x + 200) টাকা হতো, profit হতো .15x
অর্থাৎ, .9x + 200 = x + .15x ⇒ .9x + 200 = 1.15x ⇒.25x = 200 ∴ x = 800

5. (B) At 20% loss, 80 টাকা বিক্রয় ম ল্য হলে cost = 100 Tk.
∴ 200 Tk. টাকা বিক্রয় ম ল্য হলে cost = (100 × 200) / 80 = 250 Tk

6. (D) ধরি, original price = 100 টাকা
Asif 20% লাভ করলে price = 120 টাকা অর্থাৎ Rahman কিনেছে 120 টাকায়।
Rahman 15% ক্ষতিতে বিক্রি করলে বিক্রয়মূল্য = $120 - (120 \times \frac{15}{100}) = 102$ টাকা।
অর্থাৎ, Fahad কিনেছে 102 টাকায়; এখন, Fahad 102 টাকায় কিনলে original price = 100 টাকা
Fahad 510 টাকায় কিনলে original price = $\frac{100 \times 510}{102}$ টাকা = 500 টাকা।

7. (A) প্রথম 100 TV set এর cost = (100 × 10,000) টাকা = 1,000,000 টাকা
পরবর্তী 100 TV set এর cost = (100 × 7,500) টাকা = 750,000 টাকা
∴Total cost = (1,000,000 + 750,000) = 1,750,000 টাকা profit = 3,00,000 টাকা
∴মোট বিক্রয়মূল্য = (1750,000 + 300,000) = 20,50,000 টাকা
অর্থাৎ প্রতিটি TV set এর বিক্রয়মূল্য = $\frac{20,50,000}{200}$ টাকা = 10,250 টাকা।

8. (C) 15% increase = Tk. 450
∴ 10% increase = Tk. $\frac{450 \times 10}{15}$ = Tk. 300।

9. (C) 20% profit হওয়াতে 100 টাকার জিনিস বিক্রি হয় 120 টাকায়। প্রশ্নে বিক্রয় মূল্য দেয়া আছে 60। এখন প্রথমে cost বের করতে হবে। 120 টাকা বিক্রয়মূল্য হলে ক্রয়মূল্য 100 টাকা।

$\therefore$ 1 টাকা বিক্রয় মূল্য হলে ক্রয় মূল্য $\frac{100}{120}$ টাকা: $\therefore$ 60 টাকা বিক্রয় মূল্য হলে ক্রয় মূল্য $\frac{100}{120} \times 60 = 50$ টাকা। এখন, বিক্রেতা তার পণ্যেও দাম কমাবে যাতে Profit হয় ক্রয় মূল্যের (বা cost-এর) 12% তার মানে profit = 12% of 50 = $\frac{12}{120} \times 50 = 6$ টাকা, $\therefore$ New retail price = cost + profit = 50 + 6 = 56 টাকা।

10. (D) মনে করি, 100 টাকার পণ্য ছিলো $\therefore$ বিক্রয় যোগ্য পণ্য = 100–5–5=90 টাকার। overall profit 20% হতে হলে 90 টাকার পণ্য বিক্রয় করে 120 টাকা পেতে হবে। অর্থাৎ 120 – 90 = 30 টাকা profit করতে হবে। $\therefore$ % profit = $\frac{30}{90} = \frac{1}{3} = 33.3\%$

11. (C) 400 এর 10%= 40 $\therefore$ 10% discount এর পর দাম = 400 – 40 = 360; এখন, 5% of 360 = 18 টাকা। $\therefore$ final discounted price = 360 – 18 = 342

12. (B) 48 টাকার শার্ট 25% discount এ পাওয়া যায় $= 48 - (48 \times \frac{25}{100})$ টাকায়। = 36 টাকায়।

36 টাকায় বিক্রি করলে 20% profit থাকে। অর্থাৎ, বিক্রয়মূল্য 120 টাকা হলে cost = 100 টাকা $\therefore$ বিক্রয়মূল্য 36 টাকা হলে cost = $\frac{100 \times 36}{120}$ টাকা = 30 টাকা।

13. (D) ১ম type এর chocolate = x টি হলে ম ল্য = x/9 Tk. দ্বিতীয় type এর x টি chocolate এর ম ল্য = x/11 Tk.

$\therefore$ total cost = x/9 + x/11 = $\frac{20x}{99}$ Tk। মোট 2x টার বিক্রয় ম ল্য = $\frac{2x \times 1}{10} = \frac{x}{5}$ $\therefore$ loss = $\frac{20x}{99} - \frac{x}{5} = \frac{x}{99 \times 5}$; $\therefore$ % loss = $\frac{loss}{cost} = \frac{99 \times 5}{20x}$ = 1% loss.

14. (B) ধরি, X এর কাছে cost = x টাকা $\therefore$ Y কিনল $= x + \frac{28x}{100} = x + \frac{7x}{25} = \frac{32x}{25}$ টাকায়

Y বিক্রয় করল $= \left(\frac{32x}{25} - \frac{32x}{25 \times 4}\right)$ টাকায় $= \frac{128x - 32x}{100} = \frac{96x}{100}$ টাকায় অর্থাৎ, Z কিনল $\frac{96x}{100}$ টাকায়

প্রশ্নমতে, $\frac{96x}{100} + 2 = x \Rightarrow x - \frac{96x}{100} = 2 \Rightarrow x = 50$ টাকা

15. (D) 25% gain (লাভ) হওয়াতে বিক্রয়ম ল্য = 125 টাকা। $\therefore$ 125 টাকা বিক্রয়মূল্য হলে cost = 100

150 টাকা বিক্রয়ম ল্য হলে cost = $\frac{100 \times 150}{125} = 120$, $\therefore$ material cost = $\frac{120}{5} \times 2 = 48$ টাকা।

16. (B) 10% of 20 = 2 mangoes were damaged; $\therefore$ বিক্রি করলো 20 – 2 =18 = $1\frac{1}{2}$ dozen;

বিক্রয় ম ল্য = $54 \times 1\frac{1}{2} = 81$. $\therefore$ profit = 81 – 55 = 26

17. (B) Buying price = Tk. 10/dozen = Tk. $\frac{5}{6}$ per pen

Selling price = Tk. 120/hundred pen = Tk. $\frac{6}{5}$ per pen

Profit = Tk. $\frac{6}{5}$ – Tk. $\frac{5}{6}$ = Tk. $\frac{11}{30}$

$\frac{5}{6}$ —— $\frac{11}{30}$

100 ____ $\frac{\frac{11}{30}\times 100}{\frac{5}{6}}$ = 44%

18. (C) ধরি, x Kg টমেটো কেনা হয়েছিল; অর্থাৎ মোট cost = 45x 10% নষ্ট হয়েছে; অর্থাৎ $x - \frac{x}{10} = \frac{9x}{10} kg$ টমেটো রয়ে গেছে।

12% profit করতে চাইলে বিক্রয়মূল্য $= 45x + \frac{45x\times 12}{100} = \frac{4500x+540x}{100} = \frac{5040x}{100} = 50.4x$

∴ তখন প্রতি kg এর বিক্রয়মূল্য $= 50.4x \div \frac{9x}{10} = 50.4x \times \frac{10}{9x}$

= 56 টাকা

19. (C) Let, cost = 100
Spring sales price was marked down by 20%, so selling price was 80% of cost.
Spring price = 80.
Summer sales price was marked down by another 20%, so selling price was 80% of spring price.
Summer price = 80 × 80% = 64.

20. (A) Initial total cost = 100
At 15% profit, selling price = 115.
If production cost decreases by 20%, production cost becomes 80% × 80 = 64.
Total cost becomes 84. So, profit = 115 – 84 = 31 Tk.

21. (C) মনেকরি, cost = 100
actual selling price = 140
এখন actual selling price পাওয়া যায় Tag Price থেকে 30% discount দেবার পরে।
Tagged price 100 হলে selling price হবে 70
অতএব, Tagged price = 100×2 = 200
যখন, Tag price 200 ⇒ cost 100

∴ Tag price 460 ⇒ cost $\frac{100}{200}\times 460 = 230$.

22. (A) Total increase /decrease = $A + B + \frac{AB}{100}$

$= 20 - 20 + \frac{20 \times (-20)}{100} = -4$

∴ Price 4% কমে যাবে। Ans: (A) 4% loss

23. (C) Total cost = $100 \times x + 300 \times 2x + 600 \times 3x = 2500\,x$.
20% profit করলে price = $2500x + 2500x \times 20\% = 3000x$,
total quantity = 100+ 300 +600 = 1000
average price = 3000x/ 1000= 3x.

24. (B) মনে করি, ক্রয়মূল্য = 100 টাকা; ∴ 10% loss এ বিক্রয়মূল্য= 90 টাকা এবং 5% profit এ বিক্রয়মূল্য = 105 টাকা ∴ বিক্রয়মূল্য (105-90) = 15 টাকা বেশি হলে, 5% profit হতো; এখন ঐকিক নিয়ম ব্যবহার করে, বিক্রয়মূল্য 15 টাকা বেশি হলে ক্রয় মূল্য 100 টাকা

∴ বিক্রয়মূল্য 1 টাকা বেশি হলে ক্রয়মূল্য $\frac{100}{15}$ টাকা

∴ বিক্রয় মূল্য 6 টাকা বেশি হলে ক্রয়মূল্য $\frac{100}{15} \times 6 = 40$ টাকা

25. (B) Profit = 20% of cost = 20% x 30 = 6; ∴ selling price = 30 + 6 = 36Tk.
Let asking price = x; ∴ x – 10% of x = 36: ⇒ 36; ⇒ $x = \frac{36}{9} = 40$ Tk.

26. (D) 6% profit এ 100 টাকার পণ্যের বিক্রয় মূল্য 106 টাকা। এখন, cost 4% less হলে, cost = 100 – 4 = 96 টাকা। ∴ profit = 12.5% of 96 = $\frac{12.5}{100} \times 96 = 12$ টাকা। ∴ 96 টাকার পণ্যের বিক্রয়মূল্য = 96 + 12 = 108 টাকা। ∴ বিক্রয় মূল্য 108 – 106 = 2 টাকা বেশি হলে ক্রয়মূল্য 100 টাকা। ∴ বিক্রয় মূল্য 1 টাকা বেশি হলে ক্রয়মূল্য $\frac{100}{2}$ টাকা। ∴ বিক্রয়মূল্য 4 টাকা বেশি হলে ক্রয়মূল্য 50 × 4 = 200 টাকা।

27. (D) Sales price per dozen = $\frac{m}{6} \times 12 = 2m$

profit per dozen = 2m – m = m profit percentage = $\frac{m}{m} \times 100 = 100\%$

28. (C) let, cost = 100. ∴ Selling price = 90
If cost was 20% less cost would have been 80.
If selling price was Tk 55 more selling price would have been 145
Profit would have been 65. Given that profit is 40%.
So, 40% of cost = 65
1% = 65/4
100% = (65/40) X 100 = 250 Tk. So, cost is 250 Tk. (Remember that profit is measured as a percaentage of cost and 100% of cost is cost itself)

29. (A) ১ম 50% অর্থাৎ (2100 × 50%) বা 1050 টি guide এ profit
= 1050 × 15 = Tk. 15750
বাকি 1050 টি guide এ loss হয় = 1050 × 2 = Tk 2100.
Overall profit = 15750 – 2100 = Tk. 13,650

Average profit per book = = $\frac{13650}{2100}$ Tk. 6.5

30. (D) Retail price 40 taka (per pen). 20% discount = $40 \times \frac{20}{100} = 8$ taka

অর্থাৎ, প্রতি pen এ save হয় = 8 taka
Total savings = 240 taka

$\therefore$ Number of pens = $\frac{240}{8} = 30$ pen.

31. (D) let, cost price 100
Selling price= 140; unit= 10
After discount,
Selling price = 126; unit= 14.
So, new profit= (126*14-100*14) = 364
Old profit= (140*10- 100*10) =400
So the ratio of new to old profit is = 364/400 = 0.91
So the answer is D.

32. (D) 1 ডজন আপেলের দাম = 100 টাকা। 1 ডজন আমের দাম = 120 টাকা
যদি আপেল ও আমের জন্য একই পরিমাণ টাকা খরচ করতে হয়, তবে খরচকৃত টাকার পরিমাণ 100 ও 120 দ্বারা বিভাজ্য হবে।
ধরি, টাকার পরিমাণ = 600 $\therefore$ মোট খরচ = 600 + 600 = 1200 টাকা

আপেল পাওয়া যাবে $\frac{600}{100} = 6$ ডজন, আম পাওয়া যাবে $\frac{600}{100} = 5$ ডজন

আপেল থেকে পাওয়া যাবে = 6 × 110 = 660 টাকা; আম থেকে পাওয়া যাবে = 5 × 110 = 550 টাকা
মোট বিক্রয়ম ল্য = 660 + 550 = 1210 টাকা 1200 টাকায় লাভ হল = 10 টাকা

100 টাকায় লাভ হল = $\frac{10 \times 100}{1200}$ টাকা = $\frac{10}{12} = \frac{5}{6}$ টাকা অর্থাৎ, প্রায় 1 টাকা বা 1% profit

33. (C) মনে করি, purchase price x তাহলে 6% profit সহ selling price = 1.06. এখন (1.06x +4) – 0.96x
= 0.96x × 0.125 = 0.02x = 4, x = 200 টাকা।

34. (E) মনে করি, প্রত্যেক ধরনের চকলেট কেনা হল 60 টি করে। তাহলে total cost = $60 \times \frac{1}{4} + 60 \times \frac{1}{6} =$

25 । আবার selling price = $60 \times 2 \times \frac{1}{5} = 24$ । কাজেই percent loss = $\frac{25-24}{25} \times 100 = 4\%$.

35. (A) মনে করি, ২ বছর আগে pen B এর price = x টাকা।
$\therefore$ ২ বছর আগে pen A এর price = (x + 70) টাকা।
অর্থাৎ, তখন pen A এর price = 2 (x + 70) = 2x + 140 টাকা। এবং এখন pen B এর price = x + 20
টাকা প্রশ্নমতে, 2x + 140 + x +20 = 250 $\Rightarrow$ 3x = 90 $\therefore$ x=30

36. (C) ধরি, cost = 100;
$\therefore$ price = 120; selling price = $120 - (120 \times \frac{10}{100}) =$
$120 - 12 = 108$ টাকা।
অর্থাৎ, profit = 108 − 100 = 8 টাকা
8 টাকা profit হলে cost = 100 টাকা
$\therefore$ 2400 টাকা profit হলে cost = 30,000 টাকা।

37. (E) 20% profit এ,
Cost 100 হলে selling price = 120
বা S.P 120 হলে cost = 100
$\therefore$ S.P 1600 হলে cost = $\frac{100 \times 1600}{120}$ = 1333.33 টাকা
10% loss এ,
cost 100 হলে S.P = 90 টাকা
বা, S.P 90 হলে cost = 100 টাকা
$\therefore$ S.P 960 হলে cost = $\frac{100 \times 960}{90}$ = 1066.66 টাকা
Total cost = (1333.33 + 1066.66) টাকা = 2400 টাকা
Total S.P = (1600 + 960) টাকা = 2560 টাকা
$\therefore$ profit = $\left(\frac{2560 - 2400}{2400} \times 100\right)\% = \frac{160 \times 100}{2400}\% = 6.67\%$।

38. (B) After converting \$70 to francs in free rate, the man will get = 400 × 70 = 28,000 francs
Again, after converting it to dollars in the official rate, he will get = 28,000 ÷ 350 = \$80
Therefore, profit = \$80 - \$70 = \$10

39. (B) 1 টি egg এর cost price = $\frac{35}{100}$ = 0.35 Tk.
1 টি egg এর selling price = $\frac{7.20}{12}$ = 0.60 Tk.
1 টি egg এ profit = 0.60 - 0.35 = 0.25 Tk.

0.25	Tk	profit	হয়	1 টি egg এ
$\therefore$ 1	Tk	"	"	$\frac{1}{0.25}$ টি egg এ
$\therefore$ 30	Tk	"	"	$\frac{30}{0.25}$ টি egg এ

$= \frac{30 \times 100}{25}$ টি egg এ
= 120 টি egg।

40. (E) মনেকরি, loss এ sell করা article এর cost x
profit এ " " " " " $(1400 - x)$
এখন, overall কোন profit বা loss নেই, অর্থাৎ দুই article এর profit এবং loss equal.

$$\frac{8x}{100} = \frac{20}{100}(1400 - x)$$

$\Rightarrow 8x = 28000 - 20x$
$\Rightarrow 28x = 28000$
$\Rightarrow x = 1000$
অর্থাৎ, selling price of the article sold at 8% loss = 920 Tk.

41. (B) Let, the listed price was 100 Tk.
তাহলে 28% discount এ sell করেছে 72 টাকায়।
এখানে 10% loss হওয়ায় cost price = 72 × 100/90 = 80 টাকা।
আবার listed price এর 90% দামে মানে 90 টাকায় বিক্রি করলে profit হয় 90 – 80 = 10 টাকা।
80 টাকায় profit হয় 10 টাকা, যা percentage এ 12.5%

42. (B) Let, the cost price is 100
So, the selling price is 140.
Giving 30% discount,
x -30% of x = 140
So, x = 200.
Now, giving 40% discount,
200- 40% of 200= 200- 80
= 120.
So the new selling price is 120 taka.
So profit= 120-100 = 20
So the answer is B.

43. (C) BACK CALCULATE করে Tk.1500 ধরে করলে উত্তর সঠিক হয়।
Thus Answer Option C.

44. (B) ধরি, List price হচ্ছে = a
12 টা পেন কিনতে Original খরচ 10a (কারন 12 পেন পাচ্ছে 10 টা পেন এর দাম এ)
এবং এই price এর উপর পাচ্ছে 20% discount
তাহলে, কিনতে লাগছে, 8a
Cost of 12 pens = 8a
Cost of 1 pen = 2/3 a
এখন, 2/3a = 1.2x (কারণ এই দাম এ Seller এর 20% profit হচ্ছে)
a = 1.8x

45. (E) ধরি, 2003 সালে income ছিল ৫, 2004 সালে 1.2x এবং 2005 সালে 1.44x টাকা। তাহলে total income হয় (1+1.2+1.44) = 3.64x টাকা।
দেয়া আছে, total income 36400 টাকা। অতএব, 2005 সালে income ছিল = (1.44x/3.64x) x 36400 = 14,400 টাকা।

46. (C) 50 টি black pen এ profit 20%

Black pen এর cost price x হলে x+20% of x=48

x=40 টাকা

Profit per pen=8 Taka

Profit for 50 pen =400 Taka

50 টি red pen এ loss 20%

Red pen এর cost price x হলে, x-x এর 20%=48 or, x=60

Loss per pen=12

Loss for 50 pen=600 taka

Net loss= 200 taka

Answer (C)

47. (C) ধরি, পূর্বে cost price 100 টাকা

এবং sale = 10

Cost price 10% reduce করার পর,

Cost price = 90 টাকা

এবং sale =13 টাকা

Revenue = (13*90-100*10)

= 170

1000 টাকায় revenue 170 টাকা

1oo টাকায় revenue 17 টাকা

সুতরাং percentage increase=17%

সঠিক Answer (C)

48. (A) ধরি, price x টাকা।

TV এর price বাড়ার পর = x + x এর 20%

=1.2x

Computer এর price কমার পর = x-x এর 10%

= 0.9x

পূর্বে 4 টি TV এবং 4 টি computer এর price = 8x

এখন 4 টি TV এবং 4 টি computer এর price = 4.8x+3.6x

= 8.4x

So, percentage increase = .4/8 * 100

=5%

সঠিক Answer (A)

49. **(B)** Tk. 250

ধরি নেই, ক্রয় মূল্য = x. তাহলে, বিক্রয় মূল্য = 0.9x.

যদি সে 20% কম দাম এ ক্রয় করত, i.e. 0.8x এবং আরও Tk 55 দাম বাড়িয়ে বিক্রয় করত, then the profit will be

40%. That is, 0.9x + 55 = 140% of 0.8x

55 = 1.12x – 0.9x

x = 250.

50. (B)
Let number of laptops he sells now be x
So next month he will be able to sell x-6 laptops
The price at he sells per laptop be y
So new price per laptop = y+10,000
So, (y+10,000)(x-6) = 760,000
and xy – (y+10,000)(x-6) = 32,000

Solving these 2 equations we get x=26
So the number of laptops he can sell next month = 26-6 =20

51. (E)
The products would be sold for BDT 500 which is 20% marked up price.
So if selling price is 120, cost price is 100
So, if selling price is 500, cost price is 416.66
So total cost price = 416.66 * 120 = 50,000
Now, total income = 500*108 + 12*50%*416.666
= 54,000 + 2,500
= 56,500
So profit = 56,500-50,000=6,500
So in percentage, 6,500*100/50,000 = 13%

52. (D)
For red pens,
Selling price = 48, loss = 20%
So, 0.8*Cost price = 48, or, Cost price = 60
Total loss = (60*50) – (48*50) = 600
For black pens,
Selling price = 48 taka, profit = 20%
So, 1.2*Cost price = 48, or, Cost price = 40
Total profit = (48*50) – (40*50) = 400
Therefore, net gain = 400 – 600 = -200

53. (C)
Let, original list price be 100 taka.
So, discount for Arif = 30% of 100 = 30.
New list price = 100 + 50% of 100 = 150
But the amount of discount is still 30 taka.
So, the discount in percentage now = (30/150)*100% = 20%

54. (B)
Let cost price be 100 and initial selling price be x.
So, initial profit = x – 100
After doubling, selling price = 2x, so, new profit = 2x – 100
Since profit triples,
2x – 100 = 3 (x – 100), so, x = 200.
Therefore, initial profit in percentage = ((200-100)/100) * 100% = 100%

55. (E)
Ratio of cost prices of P and Q = 5:7. Let their cost prices be 5x and 7x, respectively.
Ratio of selling prices of P and Q = 2:5. Let their selling prices be 2y and 5y, respectively.
Loss on P = 5x – 2y, and loss on Q = 7x – 5y.
Since losses are equal,
5x – 2y = 7x – 5y
So, x/y = 3/2
Ratio of cost price to selling price of Q = (7x/5y) = (7/5)*(x/y) = (7/5)*(3/2) = 21/10

56. (B)
Let, initial cost price be x. With a 20% profit, selling price = 1.2x
If the cost price were 10% less, it would be 0.9x.
The selling price if he had received 24 taka more would've been 1.2x + 24.
Since the new profit is 40%,
1.2x + 24 = (140/100)*0.9x
x = 400
So, original selling price = 1.2*400 = 480

57. (B) purchase price is X
Selling price after 50% markup applied = 1.5x
Selling price after first discount = 1.5x × 0.8
Selling price after 2nd discount = 1.5x × 0.8 × 0.7 = 0.84x (B)

58. (C) Let, share of Muib = M, Rabib = R, Tarique = T and Zafar = Z
For ease of calculation, we can ignore 4 zeroes in each of the figures
Given,
M+R+T+Z=80.. eq 1
Also
M+3=(R+1/3R)=(80/100)T=Z-4... eq 2
From 2, We can get M, R, T in terms of Z, which is
M=Z-7... eq 3
R=(3/4)Z-3 ... eq 4
T=(5/4)Z-5... eq 5
Substitute Eq 3,4,5 in eq 1, we get
Z-7+(3/4)Z-4+(5/4)Z-5+Z=80
4Z=95
Z=23.75

59. (E)
The store keeps selling 20% or 1/5 of its stock daily, without replacing. So at the end of the day, the stock that remains is 4/5 of the original stock. We have to find the fraction after four days, which means we have to multiply the original value four times by 4/5.
So lets start with a number '625' which represents the original stock. (because 625 = 5^4)
Thus, stock after 4 days = 625 * 4/5 * 4/5 * 4/5 * 4/5 = 256.
Stock remaining = 625-256 = 369
So the required fraction = 369/625

60. (E) Suppose, the cost price of one orange is X taka.
So, the cost price of 60 oranges is 60X taka.
And, from the question we get, the selling price of 60 oranges is 624 taka.
As the seller incurred a loss, the cost price will be higher than the selling price.
So, the equation to calculate the loss will be,
Cost price – Selling price = Loss
Putting our data into the equation, we get,
$60X - 624 = 8X$
$\Rightarrow 52X = 624$
$\Rightarrow X = 624/52$
So, $X = 12$.
The cost price of one orange is 12 taka.

61. (D)
Let, Listed price be 100x
So after discount price s 80x
20% profit means
If Selling Price is 120, Cost price is 100
So, if Selling Price is 80x, Cost Price is (100*80x)/120
= 66.67x
So Listed price is (100x/66.7x)*100% of actual cost price
= 150%