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INTRODUCTION

1. Cost Price (C.P.)

The price at which an article is purchased is called its cost price.

2. Selling Price (S.P.)

The price at which an article is sold is called its selling price.

3. Profit (Gain)

If S.P. > C.P., then

$$\text{Profit} = \text{S.P.} - \text{C.P.}$$

$$\Rightarrow \text{S.P.} = \text{Profit} + \text{C.P.}$$

$$\text{And} \quad \text{C.P.} = \text{S.P.} - \text{Profit}$$

4. Loss

If S.P. < C.P., then

$$\text{Loss} = \text{C.P.} - \text{S.P.}$$

$$\Rightarrow \text{S.P.} = \text{C.P.} - \text{Loss}$$

$$\text{And} \quad \text{C.P.} = \text{S.P.} + \text{Loss}$$

5. Marked Price (M.P.)

The printed price or original price of an article is called the marked price (or list price).

6. Discount

An amount deducted from the marked price of an article is called discount.

7. Net Price

The amount paid by the customer for an article after deducting discount is called the net price (or selling price) (or cost price for the purchaser).

NET PRICE (or Selling Price) = M.P. -
Discount

8. Cash Discount

The amount of discount offered by a wholesaler to a retailer, if the retailer marks the payment within a stated time is called cash discount.

9. Retail Discount

The amount by which a retailer reduces the price of an item to induce sales or to dispose of his old stock is called retail discount.

10. Trade Discount

The discount offered by the manufacturers to the dealers is called trade discount.

11. Gross Profit (Income)

The total profit (income) without deducting tax is called gross profit.

12. Net Profit (Income)

The profit (income) after deducting tax is called net profit.

II. SHORT CUTS TO SOLVE THE PROBLEM OF PROFIT, LOSS, AND DISCOUNT

CASE I: Profit percentage is given by

$$\text{Profit \%} = \left(\frac{\text{Amount of profit}}{\text{C.P.}} \times 100 \right) \%$$

Case II: Loss percentage is given by

$$\text{Loss \%} = \left(\frac{\text{Amount of loss}}{\text{C.P.}} \times 100 \right) \%$$

Case III: If there is a profit of r%, then

$$\text{S.P.} = \text{C.P.} + \text{profit} = \text{C.P.} + r\% \text{ of C.P.}$$

$$= \text{C.P.} + \frac{r}{100} \text{ of C.P.} = \left(1 + \frac{r}{100} \right) \text{ of C.P.}$$

$$\text{S.P.} = \left(1 + \frac{r}{100} \right) \times \text{C.P.} \quad \text{and} \quad \text{C.P.} = \frac{\text{S.P.}}{\left(1 + \frac{r}{100} \right)}$$

Case IV: If there is a loss of r%, then

$$\text{S.P.} = \text{C.P.} - \text{Profit} = \text{C.P.} - r\% \text{ of C.P.}$$





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CASE XI: If there is some error in the scale for selling an article then

$$\text{Gain \%} = \left[\frac{\text{Error}}{\text{True value} - \text{Error}} \times 100 \right] \%$$

Q. A dishonest shopkeeper uses a weight of 960 gm for a Kg. wt to sell his goods. Find his gain percent.

a) $4\frac{1}{5}\%$ b) $4\frac{1}{6}\%$
 c) $4\frac{1}{7}\%$ d) $4\frac{1}{8}\%$

CASE XII : If $d_1\%$, $d_2\%$ and $d_3\%$ be the three successive discounts on an article, then its S.P. is given by

$$\text{S.P.} = \text{Marked price} \times \frac{100-d_1}{100} \times \frac{100-d_2}{100} \times \frac{100-d_3}{100}$$

Q. A brass article is marked at Rs. 1500 with 10% and 20% off. During festival season, an additional discount of 3% is allowed for cash payment. Find the selling price of the article.

a) **Rs. 1047.60** b) Rs. 1077.60
 c) Rs. 1046.60 d) Rs. 1043.60

CASE XIII : Let $E\%$ be the single discount equivalent to successive discount of $d_1\%$ and $d_2\%$, then

$$E\% = \left(d_1 + d_2 - \frac{1}{100} d_1 d_2 \right) \%$$

Total discount = $E\%$ of the marked price

$\text{S.P.} = (100 - E)\% \text{ of list price}$

$$= \text{List price} \times \left(\frac{100-d_1}{100} \right) \left(\frac{100-d_2}{100} \right)$$

Discount = List price - Selling price

Some important points:

1) The gain or loss percent is always calculated on sot price

- 2) Overhead expenses like cartage, labour charge, transportation, commission, taxes etc. are also included in cost price
- 3) Discounts precent is always calculated on marked price (List Price)
- 4) Discount calculated on the amount which remain after deducting the first discount from the marked price, is called successive discount.
- 5) If there are two or more discount allowed successively to the list price of an article, they constitute a discount series
- 6) When the gain % on one article is equal to the loss % on other article sold at some price, then there is always a loss and selling price does not make any difference.

Practice Question:

1) If CP is Rs 56.25 and Gain 20% then find SP?

a) **67.5%** b) 57.5%
 c) 67.25% d) 57.25%

2) If CP is Rs 80.40 and Loss 5% then find SP?

a) 74.28 b) 73.25
 c) **76.38** d) 72.28

3) A shirt is bought for Rs. 400, if the shirt is sold at 15% profit, find its SP

a) 466 b) 470
 c) **460** d) 446

4) A pair of sun - glasses marked at Rs. 65 were sold at a discount of 15%. Find the selling price.

a) **Rs. 55.25** b) Rs. 55.90
 c) Rs. 55.30 d) Rs. 55.37

5) A shopkeeper buys 80 articles for Rs. 2,400 and sells them for a profit of 16%. Find the selling price of one.

a) **2784** b) 2635
 c) 2754 d) 2378





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33) By selling 33m of cloth, a shopkeeper gains an amount equal to the cost price of 11m. find the gain percent.

a) $33\frac{1}{3}\%$ b) $33\frac{1}{8}\%$
 c) $33\frac{1}{5}\%$ d) $33\frac{1}{7}\%$

34) Selling price of 6 pens is equal to the cost price of 7 pen, find the gain or loss %

a) $16\frac{1}{7}\%$ b) $16\frac{2}{3}\%$
 c) $16\frac{3}{2}\%$ d) $16\frac{1}{4}\%$

35) A man buys an article for Rs. 25 and it for Rs. 30.

His gain % is

a) 16.6% b) 20%
 c) 25.5% d) 25.67%

36) If gain is $\frac{1}{4}$ of C.P., the gain percentage is

a) 4% b) 25%
 c) 50% d) 75%

37) The list price of a book is Rs. 150 and sold for Rs. 120. The rate of discount is

a) 25% b) 20%
 c) $16\frac{4}{7}\%$ d) $12\frac{2}{27}\%$

38) A man sold 250 chairs and had a gain equal to selling price of 50 chairs. His profit per cent is:

a) 50% b) 25%
 c) 15% d) 20%

39) A man buys 12 articles for Rs.12 and sells them at the rate of Rs.1.25 per article. His gain percentage is:

a) 25% b) 15%
 c) 20% d) 18%

40) A tradesman allows a discount of 15% on the marked price. How much above the cost price must he mark his goods as to gain 19%?

a) 34% b) 25%
 c) 30% d) 40%

41) A cloth merchant sold half of his cloth at 40% profit, half of remaining at 40% loss and the rest was sold at the cost price. In the total transaction his gain or loss will be

a) 15% loss b) 10% gain
 c) 25% loss d) 20% gain

42) A dealer offered a machine at a discount of 5% but marked 20% higher than the cost price. Find his profit percent.

a) 13% b) 11%
 c) 15% d) 14%

43) The cost price of 12 article is equal to the selling price of 9 articles. The gain percent is

a) 25% b) 33.3%
 c) 30% d) 67.7%

44) Amit bought 11 apples for Rs. 10 and sold 10 apples for Rs.11. The profit or loss % made by him is

a) 35% b) 30%
 c) 25% d) 21%

45) If lemons are bought at 2 for Rupee and sold at 5 for three rupees, find the gain or loss percent

a) +10% b) -20%
 c) +20% d) -10%

46) The cost Prices of 12 banana is equal to the selling price of 8 banana. Then find the loss or gain %?

a) 30% b) 20%
 c) 40% d) 50%

47) A trader mixes 26kg of rice at Rs 20 per kg with 30 kg of rice of another variety of Rs 36 per kg and sales the mixture at Rs 30 per kg. what was his profit or loss % is?

a) 6% gain b) 6% loss
 c) 5% gain d) 5% loss





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48) A producer of tea blends two varieties of tea from two tea gardens, one costing Rs. 18 per Kg and other Rs. 20 per Kg in the ratio 5 : 3. He sells the blended variety at Rs. 21 per Kg. find his gain percent.
 a) 15% b) 17%
 c) 12% d) 19%

49) I sold two watches for Rs. 300 each, one at a loss of 10% and other at a profit of 10%. What is the percent of loss(-) or the percent profit(+) that resulted from the transaction?
 a) (+)10 b) (-) 1
 c) (+)1 d) 0

50) Single discount equivalent to the discount series 20%, 10% and 5% is
 a) 31.6% b) 68.4%
 c) 265% d) 35%

51) A shopkeeper price is 50% above the cost price. If he allows his customer a discount of 30%, he makes profit of
 a) 5% b) 10%
 c) 12% d) 15%

52) A dealer marks his goods at an advance of 20% above cost price and allows a reduction of 20% on the marked price. His percentage loss or profit on cash sale is
 a) Nill b) 5% profit
 c) 4% profit d) 4% loss

53) If the cost price is 5% more than the selling price, then in the transaction there will be
 a) 4.76% loss b) 4.76% gain
 c) 5% loss d) 4.84% gain

54) After allowing a discount of 11.11%, a trader still makes a gain 14.28%. At how many percent above the cost price does he mark his goods?
 a) 28.56% b) 35%
 c) 22.22% d) None of these

55) A dishonest dealer professes to sell his goods at cost price, but he used weight of 900gm for a kg. His gain percent is
 a) 9% b) $11\frac{1}{9}\%$
 c) $12\frac{1}{9}\%$ d) 14%

56) By selling a fountain pen Rs. 9, a shopkeeper gains 20%. If the shopkeeper would have sold the same pen for Rs. 10, he would have gain
 a) 25% b) 33.3%
 c) 35.0% d) 37.6%

Special statement question:

57) Umesh sold a watch at a loss of 5%. Had he sold it for Rs. 27 more, he would have gained 7%. Find the cost price of watch.
 a) 224 b) 226
 c) 228 d) 225

58) A shopkeeper expects a gain of 22.5% on his cost price. If in a week his sales were Rs 392, what was his profit?
 a) Rs 320 b) Rs 72
 c) Rs 392 d) None of these

59) Ashok bought an article and spent Rs. 110 on its repair. He then sold it to Bhushan at a profit at a profit of 20%. Bhushan sold it to Charan at a loss of 10%. Charan sold it for Rs. 1188 at a profit of 10%. How much did Ashok pay for the article?

A) 880 b) 890
 c) 887 d) 876

60) Y % profit is made by selling an article at a certain price, but by selling at $\frac{3}{4}$ of that price there may be a loss of x%. find the relation between x and y.

a) $4x + 3y = 100$ b) $3x - 6y = 100$
 c) $4y - 3x = 100$ d) $6y - 4x = 10$



61) It would be 10% loss had they sold at Rs. 10.80 per piece. At what price should it be sold to earn a profit of 20%?
a) Rs.12 b) Rs. 12.96
c) **Rs. 14.40** d) None of these

63) By selling a tie for Rs. 63, a shopkeeper gains 5%. At what price should he sell the tie to gain 10%?
a) Rs. 72 b) Rs. 70
c) Rs.68 **d) Rs.66**

64) Cost of three cricket balls = cost of 2 pairs of leg pad Cost of 3 pairs of leg pads = cost of 2 pairs of gloves Cost of 3 pairs of gloves = cost of 2 cricket bats If a cricket bat costs Rs. 54, the cost of a cricket ball is
a) Rs. 12 b) Rs. 14
c) **Rs. 16** d) Rs.18

65) If the manufacturer gain 10%, the wholesale dealer 15% and the retailer 25%, then the cost of production of a table, the retail price of which is Rs. 1265 was
a) Rs. 632.50 **b) Rs. 800**
c) Rs. 814 d) Rs. 834.34

66) A dealer offered a machine sale for Rs.27,500, but even if he had charged 10% less, he would have made a profit of 10%. The actual cost of the machine is
a) Rs. 24,250 **b) Rs. 22,500**
c) Rs. 22,275 d) Rs. 22,000

67) Even after allowing 10% discount on the marked price of an article, a shopkeeper gain 10%. Its marked price is Rs. 77, then the C. P. is
a) Rs 70 b) Rs. 65
c) **Rs.63** d) Rs.60

68) A trades man marks his cosmetics goods at such a price that a can deduct 10% for each payment and yet makes 15% profit. The marked price of an article, which cost him Rs. 72 is
a) **Rs. 92** b) Rs. 56.34
c) Rs. 96 d) Rs.80

69) By mixing two qualities of sugar in the ratio 2:3 and selling the mixture at the rate of Rs.22 per kilogram, a shopkeeper makes a profit of 10%. If the cost of the smaller quantity be Rs.14 per kg. The cost per kg of the larger quantity is
a) Rs. 23 **b) Rs. 24**
c) Rs.25 d) Rs.26

70) If the difference between selling a shirt at a profit of 10% and 15% is Rs.10, then the cost price is
a) Rs. 110 b) Rs 115
c) Rs. 150 **d) Rs. 200**

71) If the difference between selling price of a coat at profit of 4% and 6% is Rs.3. The two selling prices are
a) Rs. 146, 149 b) Rs.150, 153
c) **Rs. 156, 159** d) Rs. 157, 160

72) A dealer buys dry fruits at Rs. 100, Rs. 80 and Rs. 60 per kg. He mixes them in the ratio 3:4:5 by weight and sells them at a profit of 50%. At what price does he sell the dry fruit?
a) Rs. 80/kg b) Rs. 110/kg
c) Rs. 95/kg **d) 115/kg**

73) An article when sold for Rs. 840 earns a profit which is double the amount of loss, when the same article is sold for Rs.600. What is the C.P. of the article?
a) Rs. 500 **b) Rs. 680**
c) Rs. 720 d) Rs. 750



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74) A reduction of 10% in the same price bananas enables a man to buy 20 bananas more than those at the original price for Rs. 150. Find the reduced price of bananas per dozen.

a) Rs.7 b) Rs. 8
c) **Rs. 9** d) Rs. 10

75) If pens are bought at Rs.40 per dozen and sold at 3 for Rs. 12, the profit on 5.5 dozen is

a) Rs.25.50 b) Rs.32.50
c) Rs.44.00 d) Rs.46.00

76) A shopkeeper professes to sell all things at a discount of 10%, but increase the S.P. of each article by 20%. His gain on each article is

a) 6% **b) 8%**
c) 10% d) 12%

77) Pankaj bought a bag with 20% discount on the original price. He got a profit of Rs. 50, by selling it at a price 150% of the price at which he bought. The original price of the bag is

a) Rs. 125 b) Rs. 150
c) Rs. 175 d) Rs. 200

78) A man bought an article and sold it at a gain of 5%. If he had bought it at 5% loss and sold it for Re 1 less, he would have made a profit of 10%. The C.P. of the article was

a) Rs. 100 b) Rs. 150
c) Rs. 200 d) Rs. 500

79) A trades man prices his goods so has to gain 5%. A fall of 10 % in the whole sale price occurs and he alters his selling price so as to gain 10% under the new conditions. A customer now purchases an article at Rs. 12 less than before. The former price of the article was

a) Rs. 200 b) Rs. 125
c) Rs. 190 d) Rs.188

80) Ram mixes 15kg of sugar purchased at the rate of RS 8 per kg with 25kg of sugar purchased at the rate of Rs 10 per kg at what rate per kg should Ram sell the mixture to get a Profit of Rs 3 per kg ?

a) Rs 9.25 per kg b) Rs 12.25 per Kg
c) Rs 10 per kg d) Rs 15.25 per kg

81) Nisha bought a number of oranges at 2 for a rupee and an equal number at 3 for a rupee. To make a profit of 20% she should sell a dozen for

a) Rs.10 b) Rs.8
c) Rs.6 d) Rs.12

82) The cost price of a radio is Rs.600. The 5% of the cost price is charged towards transportation. After adding that, if the net profit to be made is 15%, then the selling price of the radio must be

a) Rs.664.50 **b) Rs.724.50**
c) Rs.704.50 d) Rs.684.50

