Answer & Solutions

Level-I

1. **(a)** Given SP of 12 marbles = ₹ 1, loss = 20%

$\therefore$ CP of 12 marbles = ₹ $\frac{1}{0.8}$ = ₹ 1.25

Now, SP of 12 marbles at a gain of 20%

$= \text{CP} \times 1.2 = 1.25 \times 1.2 =$ ₹ 1.5

This implies that in order to gain 20%, he should sell 12 marbles for ₹ 1.5.

$\Rightarrow$ For ₹ 1, he should sell $\frac{12}{1.5} = 8$ marbles.

2. **(d)** Applying successive discounts of 10%, 12% and 15% on 100, we get $100 \times 0.9 \times 0.88 \times 0.85 = 67.32$

$\Rightarrow$ Single discount $= 100 - 67.32 = 32.68$

Hence, none of the given options is correct.

3. **(c)** Total amount used for purchasing = ₹ 160. A reduction of 20% in the price means, now a person gets 5/2 kg for ₹ 32 and this is the present price of the sugar.

$\therefore$ Present price per kg $= \frac{32}{5} \times 2 =$ ₹ 12.8

Let the original price be ₹ x. Then new price is arrived after reduction of 20% on it.

$\Rightarrow$ $x \times 0.8 = 12.8$ or $x =$ ₹ 16.

4. **(d)** If any two transactions of SP is the same and also gain % and loss % are same then there is always a loss

$$\therefore \text{loss } \% = \left(\frac{\text{Common gain or loss\%}}{10}\right)^2 = \left(\frac{10}{10}\right)^2 = 1\%$$

5. **(c)** Let he sells first grade cycle at a rate of ₹ z per bicycle.

Then, $8z + \frac{22 \times 3}{4} z = 3150 \times 1.4$

$\Rightarrow 32z + 66z = 17640$

$\Rightarrow 98z = 17640 \Rightarrow z = 180$

He should sell the first grade bicycles at a rate of ₹ 180.

6. **(b)** Let the quantity of milk purchased be x litres and quantity of water added to it be y litres. Then ratio of water to milk will be $y : x$.

Now, CP = $6.4x$ and SP = $8(x + y)$

and profit % = 37.5%

$\Rightarrow$ $8(x + y) = 6.4x \times 1.375$

$\Rightarrow$ $8x + 8y = 8.8x$

$\Rightarrow$ $8y = 0.8x$ or $\frac{x}{y} = \frac{80}{8} = \frac{10}{1}$

$\Rightarrow$ $y : x = 1 : 10$

7. **(c)** CP of 20 articles = SP of x articles = 1 (say)

Therefore, CP of 1 article $= \frac{1}{20}$,

And SP of 1 article $= \frac{1}{x}$

Now, gain% $= \frac{\frac{1}{x} - \frac{1}{20}}{\frac{1}{20}} = \frac{25}{100} \Rightarrow \left(\frac{20 - x}{20x}\right) \times 20 = \frac{25}{100}$

$\Rightarrow 80 - 4x = x \Rightarrow 5x = 80 \Rightarrow x = 16$

8. **(d)** 750 × (180% of ₹ 9) + 125 × (120% of ₹ 9)

= 750 × 16.20 + 125 × 10.80 = 12150 + 1350 = ₹ 13500

9. **(c)** Let the quantity of two varieties of tea be $5x$ kg and $4x$ kg, respectively.

Now, SP = $23 \times 9x = 207x$

and CP = $20 \times 5x + 25 \times 4x = 200x$

Profit % $= \frac{7x}{200x} \times 100 = 3.5\%$

10. **(b)** Price of the article after first discount, $65 - \left(65 \times \frac{10}{100}\right)$

= ₹ 58.5

Therefore, the second discount

$= \frac{58.5 - 56.16}{58.5} \times 100 = 4\%$

11. **(c)** Total profit = 337.50 + 1125.00 + 675 = ₹ 2137.50

Percentage profit $= \frac{2137.50}{114000} \times 100 = 1.8\%$

12. **(b)** S.P. = 100 – 12.5 = ₹ 87.5

S.P. after 6% gain = ₹ 106

Difference = ₹ 18.5

$\therefore$ C.P. $= \frac{92.5}{18.5} \times 100 =$ ₹ 500

13. **(d)** Cost price of bicycle = ₹ 5,200.

He spent ₹ 800 on it's repairs

$\therefore$ C.P. = 5200 + 800 = 6000.

Selling price = ₹ 5, 500

$\therefore$ Loss = 6000 – 5500 = 500

Hence, loss % $= \frac{500}{6000} \times 100 = 8.33\%$

14. **(a)** Let the C.P. of 150 kg of rice be ₹150.

$\therefore$ S.P. of 50 kg of rice at 10%

loss $= \frac{90}{100} \times 50 =$ ₹45

For 10% of gain on the whole.

$$\text{S.P.} = 150\times\frac{110}{100} = ₹\,165$$

$\therefore$ 100 kg rice should be sold for ₹ 120.

$\therefore$ Per cent gain = 20

15. (c) $CP = 20 \times 15 + 30 \times 13 = ₹\,690$

$$\therefore \quad SP = \frac{4}{3} \text{ of } 690 \times \frac{1}{50} = ₹\,18.40$$

16. (d) We do not know the total investment of builder, because in the question construction cost is not given. Hence, 'none of these' is the answer.

17. (c) Successive discount $= 20\% + \frac{20\times 80}{100}$

$= 20 + 16 = 36\%$

Difference in discount $= 36 - 35 = 1\%$

$\therefore$ Bill amount $= 22 \times 100 = ₹\,2200$

18. (b) C.P. of 200 kg of mixture = ₹ $(80 \times 13.50 + 120 \times 16)$

= ₹ 3000.

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

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

= ₹ 17.40 per kg.

19. (c) Let A paid = ₹ x

125 % of 120% of $x = 225$

$$\Rightarrow \frac{125}{100}\times\frac{120}{100}\times x = 225$$

$$\Rightarrow x = \frac{225\times 100\times 100}{125\times 120} = ₹\ 150$$

20. (d) Let he purchase of ₹ x/kg.

$$\therefore (525 + 30x)\times\frac{120}{100} = 60\times 18.60$$

$\Rightarrow x =$ ₹ 13.5 / kg.

21. (c) SP $= 90 \times 1.2 =$ ₹ 108

$$\text{Marked price} = \frac{108}{0.85} = ₹\,127.05$$

22. (d) Let the SP of the article be ₹ x

Expenses = 15% of x = ₹ $0.15x$

Profit = 10% of x = ₹ $0.10x$

CP = ₹ 9 (given)

Therefore, $9 + 0.15x + 0.1x = x \Rightarrow x = 12$

$$\therefore \text{ \% increase for marked price} = \frac{12-9}{9}\times 100$$

$$= \frac{100}{3}\%$$

23. (b) Price of the article after first discount

$65 - 6.5 =$ ₹ 58.5

Therefore, the second discount

$$= \frac{58.5 - 56.16}{58.5}\times 100 = 4\%$$

24. (a) Let the CP of the article be ₹ x

Then, SP $= x\times 1.12\times 1.1$

Now, $x\times 1.12\times 1.1 = 616$

$$\Rightarrow x = \frac{616}{1.232} = ₹\,500$$

25. (b) When $S_1 = S_2$, then

overall % gain or % loss

$$= \left[100 - \frac{2(100+x_1)(100-x_2)}{(100+x_1)+(100-x_2)}\right]\%$$

$$= \left(100 - \frac{2(125)(80)}{(125)+(80)}\right)\% = \left(100 - \frac{2\times 125\times 80}{205}\right)\%$$

$$= \frac{100}{41}\% \text{ gain } (\because \text{ it is +ve})$$

26. (c) Let C.P. of 1 article = ₹ 1

then C.P. of 25 articles = ₹ 25

and S.P. of 25 articles = ₹ 20

$$\therefore \text{ loss \%} = \frac{25-20}{20}\times 100 = 25\%$$

27. (d) Total cost price of mobile phone and refrigerator

= ₹ (12000 + 10000) = ₹ 22000

SP of mobile phone = (88% of 12000)

$$= ₹\left(\frac{88}{100}\times 12000\right) = ₹\,10560$$

SP of refrigerator = 108% of 10000

$$= ₹\left(\frac{108}{100}\times 10000\right) = ₹\,10800$$

Total SP of both the articles = ₹ (10560 + 10800)

= ₹ 21360

Loss = ₹ (22000 – 21360) = ₹ 640.

28. (d) $$\text{C.P.} = ₹\left(\frac{100}{105}\times 630000\right) = ₹\,600000.$$

$$\therefore \text{ Required loss \%} = \left(\frac{100000}{600000}\times 100\right)\% = 16\frac{2}{3}\%.$$

29. (a) Let ₹ X be the C.P. of the manufacturer of the car

$$\Rightarrow X\times\frac{150}{100}\times\frac{120}{100}\times\frac{80}{100} = 288000$$

$\Rightarrow X = 200000$

30. (c) Supposing the goods cost the dealer ₹ 1 for the kg., he sells for ₹ 1 goods which cost him ₹ 0.96.

Gain on ₹ 0.96 = 0.04;

% Gain $= \dfrac{0.04 \times 100}{0.96} = 4\dfrac{1}{6}\% = 4.16\%$

31. (c) Let C.P. be ₹ 100. Then, S.P. = ₹ 123.50.

Let marked price be ₹ x. Then, $\dfrac{95}{100}x = 123.50 \Rightarrow x$

$= ₹\left(\dfrac{12350}{95}\right) = ₹130.$

Now, S.P. = ₹ 130, C.P. = ₹100

∴ Profit % = 30%

32. (c) Let cost price = x

Then we have, $x\left(\dfrac{95}{100}\right)\left(\dfrac{110}{100}\right) = x\left(\dfrac{105}{100}\right) - 1$

or, $x = \dfrac{100 \times 100}{105 \times 100 - 95 \times 100} \times 200$

∴ Cost price = ₹ 200

33. (d) The new situation is

Buying:

1100 grams for ₹ 900

Hence, 1320 grams for ₹ 1080

Selling: 900 grams for ₹ 1080

Profit % $= \dfrac{420}{900} \times 100 = 46.66\%$

34. (a) Let us assume his CP/1000 gm = ₹ 100

So, his SP/kg (800 gm) = ₹ 126

So, his CP/800 gm = ₹ 80

So, profit = ₹ 46

So profit percentage = 46/80 × 100 = 57.5%

35. (b) MP of 1 Pencil = ₹ 1

For supplier, SP of 20 pencils = ₹ 16

For retailer, SP of 20 pencils = ₹ 20

Profit percentage $= \dfrac{4}{16} \times 100 = 25\%$

36. (c) The milkman defrauds 20% in buying and also defrauds 25% in selling, so his overall % gain will be

$\left[\dfrac{(100+20\%)\,(100+25\%)}{100} - 100\right]\% = 50\%$

37. (c) Let the price of 1 article = ₹ 1

⇒ Loss = 20 C.P – 20 S.P.

⇒ 5C.P. = 20 C.P. – 20 S.P. ⇒ 20 S.P = 15 C.P

⇒ CP_1 of 20 articles = ₹ 20

⇒ SP_1 of 20 articles = ₹ 15

Also given that , had he purchased the 20 articles for 25% less and sold them for $33\dfrac{1}{3}$% more, then

⇒ CP_2 of 20 articles = ₹ 15

⇒ CP_2 of 20 articles = ₹ 20

∴ Gain percentage $= \dfrac{20-15}{15} \times 100 = 33\dfrac{1}{3}\%$

38. (b) Value of consignment $= \dfrac{540 \times 100}{\frac{2}{3} \times 6 + \frac{1}{3}(-3)} = \dfrac{540 \times 100}{4-1}$

= ₹18,000

39. (d) Let C.P. = ₹ $5x$ and S.P. = ₹ $7x$. Then, Gain = ₹ $2x$

∴ Required ratio $2x : 5x = 2 : 5$

40. (a) Let C.P. be ₹ x.

Then, $\dfrac{1920 - x}{x} \times 100 = \dfrac{x - 1280}{x} \times 100$

$\Rightarrow 1920 - x = x - 1280 \Rightarrow 2x = 3200 \Rightarrow x = 1600.$

∴ Required S.P. = 125% of ₹1600

$= ₹\left(\dfrac{125}{100} \times 1600\right) = ₹\ 2000$

41. (b) Let the cost price of an item = ₹ 100,

then, selling price = ₹ 125

(∵ Profit by selling is 25%)

Now, marked price is 40% above the selling price

$\therefore$ M.P $= 125 + 125 \times \dfrac{40}{100}$

⇒ Marked price $= 125\left(1 + \dfrac{40}{100}\right) = 175$

Hence, $\dfrac{\text{Marked price}}{\text{Cost price}} = \dfrac{175}{100} = \dfrac{7}{4}$

42. (b) Assume marked price for both to be 100.

X's selling price = 100 ×0.75×0.95 = 71.25

Y's selling price = 100 × 0.84 × 0.88 = 73.92.

Buying from '*X*' is more profitable.

43. (b) Assume his CP = ₹ 1000/1100 gm

MP = ₹ 1200 and SP = ₹ 960/900 gm

So, SP/1100 gm = ₹ 1173.33

So, profit = ₹ 173.33

Profit percentage = 17.33%

44. (a) $100 \xrightarrow{10\%}$ First profit $\xrightarrow{25\%}$ Net profit

45. (c) Suppose he bought 2 kg, 4 kg and 3 kg of the three varieties. C.P. of 9 kg = ₹ (2 × 50 + 4 × 20 + 3 × 30) = ₹ 270.

S.P. of 9 kg = ₹ (9 × 33) = ₹ 297.

∴ Profit % $= \left(\dfrac{27}{270} \times 100\right)\% = 10\%.$

46. (c) Let the cost price for the manufacturer be ₹x. Then, 125% of 120% of 118% of x = 30.09.

$\Rightarrow \dfrac{125}{100} \times \dfrac{120}{100} \times \dfrac{118}{100} x = \dfrac{3009}{100} \Rightarrow \dfrac{177}{100} x = \dfrac{3009}{100}$

$\Rightarrow x = \left(\dfrac{3009}{177}\right) = 17.$

47. **(a)** Let original price = ₹ 100.

Then C.P. = ₹ 90, S.P. = 130% of ₹ 90 = ₹$\left(\frac{130}{100}\times 90\right)$

= ₹ 117.

∴ Required percentage = (117 – 100)% = 17%.

48. **(c)** Let C.P. be ₹ x. Then, 5% of x = (350 – 340) = 10

$\Rightarrow \frac{x}{20} = 10 \Rightarrow x = 200.$

49. **(c)** Let the costs of the two articles be x and y. Then,

15% of x = 20% of $y \Rightarrow \frac{x}{y} = \frac{20}{15} = \frac{4}{3}$.

So, x and y must be in the ratio of 4 : 3.

₹ 80, ₹ 60.

50. **(a)** Let cost price be ₹ 100. The, S.P. = ₹ 112.

Let printed price be ₹ x.

90% of $x = 112 \Rightarrow x = \left(\frac{112\times 100}{90}\right) = ₹\ \frac{1120}{9}$

$\therefore$ Required ratio $= 100 : \frac{1120}{9} = 900 : 1120 = 45 : 56$

51. **(c)** Price = ₹ X

SP = ₹ $1.1x = 0.5x + 15$, So, $0.6x = 15$

So, $x = 25$

52. **(a)** CP = ₹ X/dozen = 0.833/copy

So, MP = 1.69 x/dozen

SP = ₹ 1.4365 x/13 copies = 0.1105 x/copy

So, profit = 32.6%

53. **(c)** Cost price per article = 311

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

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

54. **(a)** Cost of 23 bracelet purchased at rate of ₹ 160/bracelet = ₹ 23 × 160 = ₹ 3680

If profit earned is 15%, then

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

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

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

55. **(b)** Le the CP of the shoes be ₹ x.

∴ 2033 – x = x – 1063

⇒ 2x = 2033 + 1063 = 3096

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

56. **(b)** 2 cycles – 1500

By options,

600	900
↓	↓
+20% → 720	–20% → 720

57. **(c)**

C.P. ———— M.P. ———— S.P.
x ———— 100 —— 10% discount —— 90

Let cost price (C.P.) = ₹ x

& Marked price (M.P.) = ₹ 100

$x\times\frac{108}{100} = 90$

$x = \frac{90\times 100}{108}$

New cost price : cost price

$\frac{90\times 100}{108} : 100 = 5 : 6$

58. **(c)** C.P. $= \frac{100}{(100+5)}\times 21000$

C.P = ₹ 20000

New profit = 15%

New S.P $= \frac{(100+15)}{100}\times 20000$ = ₹230000

∴ To get 15% profit he has to sell an article at ₹23000.

59. **(a)** Single equivalent discount for 30% and 20%

$= \left(30+20-\frac{30\times 20}{100}\right) = 44\%$

Single equivalent discount for 44% and 10%

$= \left(44+10-\frac{44\times 10}{100}\right) = 49.6\%$

60. **(b)** Percentage profit $= \frac{250-200}{200}\times 100 = 25\%$

61. **(a)** If the C.P. of article be ₹ x, then

$x\times\frac{116}{100} + 200 = \frac{x\times 120}{100}$

$\Rightarrow x\times\frac{4}{100} = 200$

$\Rightarrow x\times\frac{200\times 100}{4}$ = ₹ 5000

62. **(c)** C.P. of the article = ₹ 100 and marked price = ₹ x

$\therefore\ x\times\frac{90}{100} = 117$

$\Rightarrow x = \frac{117\times 100}{90} = 130 = 30\%$ above C.P.

63. (c) Let cost price of goods be ₹ 100
Trader mark up at 50% more i.e. 150

Selling price of goods $= 150 - \frac{20}{100} \times 150 = 120$

Profit % $= \frac{120-100}{100} \times 100 = 20$

64. (c) Let original price of sewing machine be ₹ x

Retailer bought it at $x - \frac{15}{100}x = 0.85x$

$0.85x + \frac{15}{100} \times 0.85x = 1955$

$1.15 \times 0.85x = 1955$

$x = \frac{1955 \times 10000}{115 \times 85} = 2000$

Discount is $\frac{15}{100} \times 2000 =$ ₹ 300

65. (a) Profit % $= \frac{1000-900}{900} \times 100 = 11\frac{1}{9}\%$

66. (b) Selling price of 5 apples = ₹ 42.50

Selling price of 60 apples $= \frac{42.5}{5} \times 60 = 510$

C.P + Profit = S.P

$C.P + \frac{20}{100} \times C.P = 510$

$C.P. = \frac{510}{120} \times 100 =$ ₹ 425

67. (a) C.P. = ₹ 450; profit = 20%

$\therefore$ S.P. $= \frac{(100+20)}{100} \times 450 =$ ₹540

Let the list price of the wrist watch be ₹x.

Then discount @ 10% = ₹ $x \times \frac{10}{100} =$ ₹$\frac{x}{10}$

$\therefore$ S.P. $= x - \frac{x}{10} =$ ₹$\frac{9}{10}x$

According to quesiton, $\frac{9x}{10} = 540$

$x = \frac{540 \times 10}{9} =$ ₹600

68. (c) Single discount $= x + y + \frac{xy}{100}$

$= -70 - 30 + \frac{(-70 \times -30)}{100}$

$= -100 + 21 = -79\%$

'–' denotes discount. Hence, single discount equivalent to 79%

69. (a) Solving this type of question by short cut.

Net profit% $= x + y + \frac{xy}{100}$

$17\% = -10 + y + \frac{(-10) \times y}{100}$ [$\therefore$ '–' for discount]

$27 = y - \frac{y}{10} \Rightarrow 27 = \frac{10y - y}{10}$

$27 \times 10 = 9y$

$y = 30\%$

Hence, he must mark his goods 30% higher than their cost price.

70. (b) Let us consider a packet or rice marked 1kg. It's actual weight is 80% of 1000 gm = 800 gm
Let C.P. of each gm be ₹1.
Then, C.P. of this packet = ₹ 800
S.P. of this packet = 110% of C.P. of 1kg

$= \frac{110}{100} \times 1000 =$ ₹1110

$\therefore$ Gain % $= \frac{(1100-800)}{1100} \times 100 = 37.5\%$

71. (c) C.P. of a radio = ₹ 600
New C.P. after adding transportation charges

= ₹$(600 + 5\% \text{ of } 600) =$ ₹$\left(600 + \frac{5}{100} \times 600\right) =$ ₹630

S.P. $= \left(\frac{100 + \text{Profit}\%}{100}\right) \times C.P$

$= \frac{100+15}{100} \times 630 = \frac{115}{10} \times 63 =$ ₹724.50

72. (a) $S.P = \frac{(100 - loss\%)}{100} \times C.P_1$

$600 = \frac{(100-10)}{100} \times CP_1$

$\therefore CP_1 = \frac{100 \times 600}{90}$

To make a gain of 20%, the S.P. of fan should be

$\frac{(100 + \text{gain}\%)}{100} \times CP_1$

$\therefore S.P = \frac{(100+20)}{100} \times \frac{100 \times 600}{90} = \frac{120}{90} \times 600 = 800$

Hence, S.P. should be ₹ 800.

73. (d) In such type of question,

Required % loss $= \frac{(25)^2}{100}\%$

$= \frac{625}{100}\% = 6.25\% = 6\frac{1}{4}\%$

74. (c) Required % earned by A

$= \left\{100 \times \frac{(100-5)}{100} \times \frac{(100+20)}{100} - 100\right\}\%$

$= \left\{100 \times \frac{95}{100} \times \frac{120}{100} - 100\right\}\%$

$= (114 - 100)\% = 14\%$

75. (d) Let MP = 100

So, SP = 100 – 25% of 100

= 100 – 25 = 75

So, Profit percent $= \frac{100-75}{75} \times 100$

$= \frac{25}{75} \times 100\% = \frac{1}{3} \times 100 = 33\frac{1}{3}\%$

76. (d) Let x = true discount

So, 216 = x + 8% of x

= x + 0.08x = 1.08x

$x = \frac{216}{1.08} =$ ₹ 200

77. (a) Printed price = ₹ 320, $d_1 = 10\%$

Let $d_2 = x\%$, Amount actually paid = ₹ 244.80

So, amount actually paid $= \left(1 - \frac{10}{100}\right)\left(1 - \frac{x}{100}\right) \times 320$

$244.80 = \frac{90}{100} \times \frac{(100-x)}{100} \times 320$

$100 - x = \frac{244.80 \times 100 \times 100}{90 \times 320} = 85 \Rightarrow x = 15\%$

78. (d) Cost to A $\xrightarrow{10\%\uparrow}$ cost to B $\xrightarrow{5\%\uparrow}$ cost to C

$\Rightarrow$ Cost to A $\times \frac{110}{100} \times \frac{105}{100} =$ ₹ 462

$\Rightarrow$ Cost to A $= \frac{462 \times 100 \times 100}{110 \times 105} =$ ₹ 400

79. (b) CP of 1000 gm tea = 18 × 7 + 13 × 3

= ₹ (126 + 39) = ₹ 165

CP of 100 g = ₹ 16.5

S.P. of 100 g = ₹ 18.15

Profit = ₹(18.15 – 16.5) = ₹ 1.65

% gain $= \frac{1.65}{16.5} \times 100 = 10\%$

80. (a) Let the labelled price be ₹ x

Now, C.P $= \frac{100}{(100 + \text{profit }\%)} \times S.P$

C.P $= \frac{100}{(100+25)} \times 8750 =$ ₹ 7000

Now, (1 – 30% concession) label price = C.P

$\left(1 - \frac{30}{100}\right)x = 7000$

$\frac{70}{100}x = 7000$

$x = \frac{7000 \times 100}{70}$

$x =$ ₹ 10,000

81. (c) ₹150 + $\frac{20}{100} \times 150 =$ ₹180

S.P = ₹180

82. (a) Least cost price = ₹(150×15) = ₹2250

Greatest selling price = ₹(350×15) = ₹5250

Required profit = ₹(5250 – 2250) = ₹3000

83. (a) Selling price = Marked price – Discount

= 200 – 20% of 200 = 160

Cost Price = 160 – 16 = 144

Gain% $= \frac{16}{144} \times 100 = \frac{100}{9}\% = 11\frac{1}{9}\%$

84. (d) Marked Price, M = 2C, where C is cost price for 15% gain, S.P. $= C + \frac{15}{100}C = 1.15C$

Let discount be x%

$2C - \frac{x}{100} \times 2C = 1.15C \Rightarrow x = 42.5\%$

85. (c) Let Cost Price of watch be ₹ x

$S.P = x - \frac{5}{100}x = .95x$

If S.P = 0.95x + 56.25 then profit = 10%

$\frac{0.95x + 56.25 - x}{x} \times 100 = 10$

$\frac{56.25}{x} - 0.05 = \frac{1}{10}$

$\frac{56.25}{x} = \frac{1}{10} + \frac{5}{100} = \frac{3}{20}$

$x = 56.25 \times \frac{20}{3} = 375$

86. (a) Profit on all the goods = 18% of 6000 = ₹ 1080

Profit on half of the goods = 12% of 3000 = ₹ 360

∴ Profit on remaining half of the objects

= 1080 – 360 = ₹ 720

Hence, required profit percentage $= \frac{720}{3000} \times 100\%$

= 24 %