

STAFF SELECTION COMMISSION – Solved Papers

DISCOUNT (Questions Asked in Previous SSC Exams)

1. Applied to a bill for Rs. 1,00,000 the difference between a discount of 40% and two successive discounts of 36% and 4% is :

- (1) Nil (2) Rs. 1,440
(3) Rs. 2,500 (4) Rs. 4,000

Ans : 2

Successive discount of 36% and 4%

$$= \left(36 + 4 - \frac{36 \times 4}{100} \right) \%$$

$$= 38.56\%$$

$$\therefore \text{Difference} = 40 - 38.56$$

$$= 1.44\%$$

Required difference

$$= 1.44\% \text{ of } 100000$$

$$= \frac{1.44 \times 100000}{100} = \text{Rs. } 1440$$

2. A tradesman marks his goods 10% above his cost price. If he allow his customers 10% discount on the marked price, how much profit or loss does he make, if any?

- (1) 1% gain
(2) 1% loss
(3) 5% gain
(4) No gain, no loss

Ans : 2

Required loss

$$= \left(\frac{10 \times 10}{100} \right) \% = 1\%$$

3. A discount of 15% on one article is the same as discount

of 20% on a second article. The costs of the two articles can be :

- (1) Rs. 85, Rs. 60
(2) Rs. 60, Rs. 40
(3) Rs. 40, Rs. 20
(4) Rs. 80, Rs. 60

Ans : 4

$$15\% \text{ of Rs. } 80 = \frac{80 \times 15}{100}$$

$$= \text{Rs. } 12 \text{ and } 20\% \text{ of } 60$$

$$= \frac{60 \times 20}{100} = \text{Rs. } 12$$

Therefore, 15% of 80 and 20% of 60 are same. Hence the cost prices, should be Rs. 80 and Rs. 60.

4. An agent gets a commission of 2.5% on the sales of cloth. If on a certain day, he gets Rs. 12.50 as commission, the cloth sold through him on that day is worth :

- (1) Rs. 250 (2) Rs. 500
(3) Rs. 750 (4) Rs. 1,250

Ans : 2

According to question,

2.5% commission

$$= \text{Rs. } 12.50$$

$$\therefore \text{Price of cloth} = 100\%$$

$$\text{i.e. } \frac{12.50}{2.5} \times 100 = \text{Rs. } 500$$

5. Successive discounts of 10% and 30% are equivalent to a single discount of :

- (1) 40% (2) 35%
(3) 38% (4) 37%

Ans : 4

Equivalent discount

$$= 30 + 10 - \frac{30 \times 10}{100} = 37\%$$

6. A tradesman marks his goods 20% above the cost price. He allows his customers a discount of 8% on marked price. Find out his profit per cent.

- (1) 12% (2) 10.4%
(3) 8.6% (4) 8.2%

Ans : 2

Suppose C.P. = 100

On 20% above S.P. = 120

On discount 8%

$$= 120 - 120 \times \frac{8}{100}$$

$$= 120 - \frac{48}{5} = 120 - 9.6$$

$$= 110.4$$

$$= 110.4 - 100 = 10.4\%$$

7. A discount of $2\frac{1}{2}\%$ is given to the customer on the marked price of an article. A man bought the article for Rs. 39. The marked price of the article is :

- (1) 42 (2) 36.5
(3) 40 (4) 41.5

Ans : 3

Suppose printed price

= Rs. 100

∴ S.P. = Rs. (100 - 2.5)

= Rs. 97.5

∴ Marked Price = $\frac{100 \times 39}{97.5}$

= Rs. 40

8. The printed price of an article is Rs. 900 but the retailer gets a discount of 40%. He sells the article for Rs. 900. Retailer's gain per cent is :

(1) 40 (2) 60

(4) $66\frac{2}{3}$ (4) $68\frac{1}{3}$

Ans : 3

Printed price = Rs. 900

On 40% discount

$$= 900 - \frac{900 \times 40}{100} = 900 - 360$$

C.P. for retailer = 540

S.P. = 900

Profit = 900 - 500 = 360 = 540

$$\text{Gain \%} = \frac{360 \times 100}{540}$$

$$= \frac{200}{3} = 66\frac{2}{3}\%$$

9. The marked price of a watch was Rs. 720/-. A man bought the same for Rs. 550.80, after getting two successive discounts, the first at 10%. What was the second discount rate?

(1) 12% (2) 14%

(3) 15% (4) 18%

Ans : 3

Marked price = Rs. 720

Actual price = Rs. 550.80

First discount = 10%

Let the second discount be $x\%$

Then, we can write

$$720 (1 - 0.10) (1 - 0.01x)$$

$$= 550.80$$

$$720 \times 0.9 (1 - 0.01x) = 550.8$$

$$648 (1 - 0.01x) = 550.8$$

$$1 - 0.01x = \frac{550.8}{648}$$

$$0.01x = 1 - \frac{550.8}{648}$$

$$x = \frac{1 - 0.85}{0.01}$$

$$x = 0.15 \times 100$$

$$x = 15$$

∴ Second discount = 15%

10. A shopkeeper marks his goods 20% above cost price, but allows 30% discount for cash. His net loss is :

(1) 8% (2) 10%

(3) 16% (4) 20%

Ans : 3

Let the cost price be Rs. x
Mark Price

$$= \left(1 + \frac{20}{100}\right)x = 1.2x$$

$$\text{Cash price} = \left(1 - \frac{30}{100}\right)1.2x$$

$$= 0.7 \times 1.2x = 0.84x$$

$$\text{Net Loss} = x - 0.84x$$

$$= 0.16x$$

∴ net loss

$$= \frac{0.16x}{x} \times 100 = 16\%$$

11. A retailer buys 40 pens at the marked price of 36 pens from a wholesaler. If he sells these pens giving a discount of 1%, what is the profit percent?

(1) 9% (2) 10%

(3) $10\frac{1}{9}\%$ (4) 11%

Ans : 2

Let the marked price of each pen be Rs. x

Total cost price of 40 pens

= Total marked price of 36 pens = Rs. $36x$

Selling price of 1 pen after 1% discount = Rs. $(1 - 0.01)x$

= Rs. $0.99x$

Selling price of 40 pens

= $40 \times \text{Rs. } 0.99x = \text{Rs. } 39.6x\%$

$$\text{Profit} = \frac{\text{Rs. } 39.6 - \text{Rs. } 36}{\text{Rs. } 36} \times 100$$

$$= \frac{\text{Rs. } 3.6}{\text{Rs. } 36} \times 100 = 10\%$$

12. A shopkeeper marks his sarees at 20% above the cost price and allows the purchaser a discount of 10% for cash buying. What profit percent does he make?

(1) 18 (2) 12

(3) 10 (4) 8

Ans : 4 TRICK

$$= 20 - 10 - \frac{20 \times 10}{100}$$

$$= 20 - 12 = 8\%$$

13. A dealer offers a discount of 10% on the marked price of an article and still makes a profit

of 20%. If its marked price is Rs. 800, then the cost price of the article is :

- (1) Rs. 900 (2) Rs. 800
(3) Rs. 700 (4) Rs. 600

Ans : 4

S.P. of that article

$$= 800 \times \frac{90}{100} = \text{Rs. } 720$$

He still makes 20% profit

$$\therefore \text{C.P. of that article} \\ = 720 \times \frac{100}{120} = \text{Rs. } 600$$

14. Successive discounts of 20% and 10% are equivalent to a single discount of :

- (1) 30% (2) 15%
(3) 28% (4) 25%

Ans : 3

Let the marked price of any article = Rs. 100

\therefore S.P. at 20% discount

$$= 100 \times \frac{80}{100} = \text{Rs. } 80$$

Again 10% discount, then S.P.

$$= 80 \times \frac{90}{100} = \text{Rs. } 72$$

\therefore Total discount

$$= 100 - 72 = \text{Rs. } 28$$

\therefore Equivalent discount %

$$= 28\%$$

Note : If two successive discounts are $x\%$ and $y\%$ then equivalent discount

$$= \left(x + y - \frac{xy}{100} \right) \%$$

15. The marked price of a watch is Rs. 1000. A retailer buys it at Rs. 810 after getting two successive discounts of 10% and another rate which is illegible. What is the second discount rate?

- (1) 15% (2) 10%
(3) 8% (4) 6.5%

Ans : 2

Price after 10% first discount

$$= 1000 \times \frac{100 - 10}{100}$$

$$= 1000 \times \frac{90}{100} = \text{Rs. } 900$$

Given :

Price after second discount

$$= \text{Rs. } 810$$

\therefore Second discount

$$= 900 - 810 = \text{Rs. } 90$$

\therefore Percentage second discount

$$= \frac{90 \times 100}{900} = 10\%$$

16. The marked price of an article is Rs. 200. A discount of $12\frac{1}{2}\%$ is allowed the marked price and a profit of 25% is made. The cost price of the article is :

- (1) Rs. 200 (2) Rs. 175
(3) Rs. 120 (4) Rs. 140

Ans : 4 Discount

$$= 12\frac{1}{2}\% = \frac{25}{2}\%$$

After discount S.P.

$$= \text{Rs. } (200 - 25) = \text{Rs. } 175$$

Gain % = 25%

Required C.P.

$$= \text{Rs. } \frac{100}{125} \times 175$$

$$= \text{Rs. } 140$$

17. Successive discounts of 10% and 20% are equivalent to a single discount of :

- (1) 30% (2) 15%
(3) 28% (4) 12%

Ans : 3

Rule : Single discount of $x\%$ and $y\%$

$$= \left(x + y - \frac{x \times y}{100} \right) \%$$

\therefore Required discount

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \%$$

$$= 30 - 2 = 28\%$$

18. A fan is listed at Rs. 1,500 and a discount of 20% is offered on the list price. What additional discount must be offered to the customer now to bring the net price to Rs. 1,104?

- (1) 8% (2) 10%
(3) 15% (4) 12%

Ans : 1

First discount = 20%

Price after first discount

$$= \text{Rs. } \left(1500 - \frac{20}{100} \times 1500 \right)$$

$$= \text{Rs. } (1500 - 300) = \text{Rs. } 1200$$

Let the additional discount be $x\%$

$$\therefore \left(1200 - \frac{x \times 20}{100} \right) = 1104$$

$$\Rightarrow 1200 - 12x = 1104$$

$$\Rightarrow 12x = 1200 - 1104 = 96$$

$$\Rightarrow x = \frac{96}{12} = 8\%$$

19. A shopkeeper earns a profit of 10% after allowing a discount of 20% on the marked price. The cost price of the article whose marked price is Rs. 880.

- (1) Rs. 704 (2) Rs. 640
(3) Rs. 774 (4) Rs. 680

Ans : 2

SP of article

$$= (100 - 20)\% \text{ of } 880$$

$$= 80\% \text{ of } 880$$

$$= 880 \times \frac{80}{100} = \text{Rs. } 704$$

$$\text{Again, } 110\% = 704$$

$$100\% = \frac{704}{110} \times 100 = \text{Rs. } 640$$

$$\therefore \text{Original cost} = \text{Rs. } 640$$

20. The equivalent single discount for two successive discounts of 15% and 10% is

- (1) 25% (2) 20%
(3) 23.5% (4) 20.5%

Ans : 3 Trick

Equivalent discount

$$= \left(15 + 10 - \frac{15 \times 10}{100} \right) \% = 23.5\%$$

21. The marked price of a watch is Rs. 160. A customer buys it for Rs. 122.40 on two successive discounts. If the first discount is 10%, then the second discount is

- (1) 10% (2) 12%
(3) 15% (4) 18%

Ans : 3 Trick

Let the second discount

$$= x\%$$

$$\therefore 160 \times \frac{(100-10)}{100} \times \frac{(100-x)}{100}$$

$$= 122.40$$

$$\Rightarrow 160 \times \frac{90}{100} \times \frac{(100-x)}{100}$$

$$= 122.40$$

$$\Rightarrow (100-x) = \frac{122.40 \times 100}{144}$$

$$= \frac{12240}{144}$$

$$\Rightarrow 100 - x = 85$$

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

22. A retailer gets a discount of 40% on the printing price of an article. The retailer sells it at the printing price. His gain per cent is

- (1) 40 (2) 55
(3) $66\frac{2}{3}$ (4) 75

Ans : 3

Let the printed price be Rs. 100

$$\text{Discount} = 40\%$$

$$\text{C.P.} = \text{Rs. } (100 - 40) = \text{Rs. } 60$$

$$\text{S.P.} = \text{Rs. } 100$$

$$\therefore \text{Gain \%} = \frac{40}{60} \times 100$$

$$= \frac{200}{3} = 66\frac{2}{3}\%$$

23. A salesman is allowed $5\frac{1}{2}\%$ discount on the total sales made by him plus a bonus of $\frac{1}{2}\%$ on sales over Rs. 10,000.

If his total earnings were Rs. 1,990, his total sales (in Rs.) was

- (1) 30,000 (2) 32,000
(3) 34,000 (4) 35,000

Ans : 3

Let the salesman's total sales be Rs. (10000 + x)

According to the question,

$$10000 \times \frac{11}{2}\% + x \times 6\% = 1990$$

$$\Rightarrow 5000 \times 11\% + 6x\% = 1990$$

$$\Rightarrow 5000 \times 11 + 6x = 199000$$

$$\Rightarrow 6x = 199000 - 55000$$

$$\Rightarrow 6x = 144000$$

$$\Rightarrow x = \frac{144000}{6} = 24000$$

\therefore The required sales

$$= 24000 + 10000$$

$$= \text{Rs. } 34,000$$

24. A man buys an article for Rs. 80 and marks it at Rs. 120. He then allows a discount of 40%. What is the loss or gain per cent?

- (1) 12% gain (2) 12% loss
(3) 10% gain (4) 10% loss

Ans : 4

Discount

$$= 120 \times \frac{40}{100} = \text{Rs. } 48$$

$$\therefore \text{S.P.} = \text{Rs. } (120 - 48)$$

$$= \text{Rs. } 72$$

$$\text{Loss} = 80 - 72 = \text{Rs. } 8$$

$$\therefore \text{Loss \%} = \frac{8}{80} \times 100 = 10$$

25. The marked price of an article is Rs. 500. It is sold at successive discounts of 20% and 10%. The selling price of the article (in rupees) is :

- (1) 350 (2) 375
(3) 360 (4) 400

Ans : 3

Equivalent discount of successive discounts of 20% and 10%

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

\therefore Selling price = (100 - 28)% of Rs. 500

$$= 72\% \text{ of Rs. } 500$$

$$= \text{Rs. } \frac{500 \times 72}{100}$$

$$= \text{Rs. } 360$$

26. A discount of 14% on the marked price of an article is allowed and then the article is sold for Rs. 387. The marked price of the article is sold for Rs. 387. The marked price of the article is

- (1) Rs. 450 (2) Rs. 427
(3) Rs. 500 (4) Rs. 440

Ans : 1

Let the marked price be Rs. x

$$\therefore 86\% \text{ of } x = 387$$

$$\therefore x = \frac{387 \times 100}{86}$$

$$\text{Rs. } 450$$

27. A trader marked the selling price of an article at 10% above the cost price. At the time of selling, he allows certain discount and suffers a loss of 1%. He allowed the discount of :

- (1) 11% (2) 10%
(3) 9% (4) 10.5%

Ans : 2

Let C.P. = Rs. 100

Marked price = Rs. 110

$$\therefore x\% \text{ of } 110 = 11$$

$$\Rightarrow x = \frac{11 \times 100}{110} = 10\%$$

28. By giving a discount of 10% on the marked price of Rs. 1100 of a cycle, a dealer gains 10%. The cost price of the cycle is :

- (1) Rs. 1100 (2) Rs. 900
(3) Rs. 1089 (4) Rs. 891

Ans : 2

Selling Price

$$= \text{Rs. } (1100 - 10\% \text{ of } 1100)$$

$$= \text{Rs. } (1100 - 110) = \text{Rs. } 990$$

Let the cost price = Rs. x

$$\therefore x + 10\% \text{ of } x = 990$$

Let the cost price = Rs. x

$$\therefore x + 10\% \text{ of } x = 990$$

29. A trader marks his goods at 20% above the cost price. If he allows a discount of 5% on the marked price, what profit per cent does he make?

- (1) 14% (2) 16%
(3) 18% (4) 20%

Ans : 1

Let the cost price = Rs. x

$$\therefore \text{Marked price} = x + 20\% \text{ of } x$$

$$= x + \frac{x}{5} = \text{Rs. } \frac{6x}{5}$$

Selling Price

$$= \text{Rs. } \left(\frac{6x}{5} - 5\% \text{ of } \frac{6x}{5} \right)$$

$$= \text{Rs. } \frac{6x}{5} \left(1 - \frac{1}{20} \right)$$

$$= \text{Rs. } \frac{6x}{5} \times \frac{19}{20} = \text{Rs. } \frac{57x}{50}$$

$$\text{Profit} = \frac{57x}{50} - x = \text{Rs. } \frac{7x}{50}$$

$$\therefore \text{Profit \%} = \frac{\frac{7x}{50}}{x} \times 100 = 14.5\%$$

30. An item is marked for Rs. 240 for sale. If two successive discounts of 10% and 5% are allowed on the sale price, the selling price of the article will be

- (1) Rs. 205.20
(2) Rs. 204
(3) Rs. 34.80
(4) Rs. 36

Ans : 1

A single discount equal to the two successive discounts

$$= \left(10 + 5 - \frac{10 \times 5}{100} \right) \% = 14.5\%$$

\therefore Selling price of the article

$$= 85.5\% \text{ of Rs. } 240$$

$$= \text{Rs. } \frac{85.5 \times 240}{100} = \text{Rs. } 205.20$$

31. A shopkeeper sells his goods at 10% discount on the marked price. What price should he mark on an article that costs him Rs. 900 to gain 10%?

- (1) Rs. 1275 (2) Rs. 1250
(3) Rs. 1175 (4) Rs. 1100

Ans : 4

C.P. = Rs. 900

Gain = 10%

$$\therefore \text{S.P.} = \text{Rs.} \left(\frac{110}{100} \times 900 \right)$$

= Rs. 990

Let the marked price be Rs. x .

$$\therefore \frac{90}{100}x = 990$$

- 32.** The price of an article is raised by 30% and then two successive discounts of 10% each are allowed. Ultimately the price of the article is

(1) increased by 10%

(2) increased by 5.3%

(3) decreased by 3%

(4) decreased by 5.3%

Ans : 2

Let the original price be Rs. 100.

\therefore Increased price = Rs. 130

Equivalent discount

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

= 19%

\therefore Ultimate price of the article = 81% of 130 = 105.3

Obviously, an increase by 5.3%.

- 33.** A tradesman gives 4% discount on the marked price and gives 1 article free for buying every 15 articles and thus gains 35%. The marked price is increased above the cost price by

(1) 40%

(2) 39%

(3) 50%

(4) 20%

Ans : 3

Let the C.P. of each article be Re. 1

For 15 books, the tradesman gives 1 book free.

\therefore C.P. of 15 books = Rs. 16

\therefore S.P. of 15 books =

$$= 16 \times \frac{135}{100} = \text{Rs.} \frac{108}{5}$$

$$\therefore \text{S.P. of 1 book} = \frac{108}{5 \times 15}$$

$$= \text{Rs.} \frac{36}{25}$$

Now, 96% of marked price

$$= \frac{36}{25}$$

\therefore Marked price

$$= \frac{36 \times 100}{25 \times 96} = \frac{3}{2}$$

$$= \text{Rs.} 1.5$$

\therefore The required % increase

$$= \frac{0.5}{1} \times 100 = 50\%$$

- 34.** A trader's marked price is 30% above the cost price. He allows his customers 10% discount on the marked price. What profit does he make?

(1) 17%

(2) 18%

(3) 16%

(4) 19%

Ans : 1

Let the cost price = Rs. 100

Then marked price = Rs. 130

\therefore Selling price = 90% of

Rs. 130 = Rs. 117

\therefore Gain % = 17%

- 35.** A discount series of 10%, 20% and 40% is equal to a single discount of

(1) 50.0%

(2) 56.8%

(3) 60.2%

(4) 70.28%

Ans : 2

Required discount

$$= 100 - \left(\frac{100 \times 90}{100} \right) \left(\frac{80}{100} \right) \times \frac{60}{100}$$

$$= 100 - \frac{100 \times 90 \times 80 \times 60}{100 \times 100 \times 100}$$

$$= 100 - 43.2 = 56.8$$

- 36.** A sells a sector priced Rs. 36,000. He gives a discount of 8% on the first Rs. 20,000 and 5% on the next Rs. 10,000. How much discount can he afford on the remaining Rs. 6,000 if he is to get as much as when 7% discount is allowed on the total?

(1) 5%

(2) 6%

(3) 7%

(4) 8%

Ans : 3

Discount on Rs. 36000

$$= \frac{3600 \times 7}{100} = \text{Rs.} 2520$$

Discount on first Rs. 20,000

$$= \frac{20000 \times 8}{100} = \text{Rs.} 1600$$

Discount on next Rs. 10,000

$$= \frac{10000 \times 5}{100} = \text{Rs.} 500$$

\therefore Discount on remaining

$$\text{Rs. } 6,000 = 2520 - (1600 + 500) = \text{Rs.} 420$$

∴ Required percent

$$= \frac{420 \times 100}{6000} = 7\%$$

37. The marked price of an electric iron is Rs. 690. The shopkeeper allows a discount of 10% and gains 8%. If no discount is allowed, his gain percent would be

- (1) 20% (2) 24%
(3) 25% (4) 28%

Ans : 1

Marked price = Rs. 690

∴ Discount = 10%

$$SP = \frac{690 \times 90}{100} = \text{Rs. } 621$$

Profit = 8%

$$\therefore CP = \frac{621}{108} \times 100 = \text{Rs. } 575$$

Profit without discount

$$= 690 - 575 = \text{Rs. } 115$$

Profit per cent

$$= \frac{115}{575} \times 100 = 20\%$$

38. A single discount equivalent to the successive discounts of 10%, 20% and 25% is

- (1) 55% (2) 45%
(3) 46% (4) 60%

Ans : 3

Single discount for discounts 10% and 20%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \%$$

$$= 28\%$$

∴ Equivalent discount for discounts 28% and 25%

$$= \left(28 + 25 - \frac{28 \times 25}{100} \right) \%$$

$$= 53 - 7 = 46\%$$

39. A housewife saved Rs. 2.50 in buying a dress on sale. If she spent Rs. 25 for the dress, approximately how much per cent she saved in the transaction?

- (1) 8% (2) 9%
(3) 10% (4) 11%

Ans : 2

The housewife spends Rs. 25 and saves Rs. 2.50.

i.e., She pays Rs. 25 for a dress of Rs. 27.50

∴ % Saving

$$= \frac{2.50}{27.50} \times 100 = 9\%$$

40. A trader marked his goods at 20% above the cost price. He sold half the stock at the marked price, one quarter at a discount of 20% on the marked price and the rest at a discount of 40% on the marked price. His total gain is

- (1) 2% (2) 4.5%
(3) 13.5% (4) 15%

Ans : 1

Let the C.P. of total goods be Rs. 100.

∴ Marked price = Rs. 120

$$\text{S.P. of } \frac{1}{2} \text{ of stock} = \text{Rs. } 60$$

$$\text{Gain} = \text{Rs. } 10$$

$$\text{S.P. of } \frac{1}{4} \text{ stock} = (80\% \text{ of Rs. } 120)$$

$$\times \frac{1}{4} = \text{Rs. } 24$$

$$\therefore \text{Loss} = \text{Rs. } (25 - 24) = \text{Rs. } 1$$

S.P. of remaining $\frac{1}{4}$ stock

$$= (60\% \text{ of Rs. } 120) \times \frac{1}{4}$$

$$= \text{Rs. } 18$$

$$\therefore \text{Gain} = 10 - 1 - 7$$

$$= \text{Rs. } 2 \text{ i.e., } 2\%$$

41. Successive discounts of 10% and 20% are equivalent to a single discount of

- (1) 30% (2) 15%
(3) 28% (4) 72%

Ans : 3

Equivalent discount

$$= \left(x + y - \frac{xy}{100} \right) \%$$

$$= \left(10 + 20 - \frac{10 \times 20}{100} \right) \%$$

$$= 28\%$$

42. A trader marked the price of his commodity so as to include a profit of 25%. He allowed discount of 16% on the marked price. His actual profit was :

- (1) 5% (2) 9%
(3) 16% (4) 25%

Ans : 1

Let the C.P. be Rs. 100

∴ Marked price = Rs. 125

S.P. = 8% of Rs. 125

$$= \frac{84 \times 125}{100} = \text{Rs. } 105$$

$$\therefore \text{Profit} = \text{Rs. } (105 - 100)$$

$$= \text{Rs. } 5$$

$$\therefore \text{Profit } \% = 5$$

43. List price of an article at a show room is Rs. 2,000 and it is being sold at successive discounts of 20% and 10%. Its net selling price will be :

- (1) Rs. 1900 (2) Rs. 1700
(3) Rs. 1440 (4) Rs. 1400

Ans : 3

Equivalent discount for successive of 20% and 10%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \%$$

$$= 28\%$$

∴ Net selling price

$$= 72\% \text{ of Rs. } 2000$$

$$= \text{Rs. } \frac{72 \times 2000}{100}$$

$$= \text{Rs. } 1440$$

44. A trader wishes to gain 20% after allowing 10% discount on the marked price to his customers. At what per cent higher than the cost price must he mark his goods?

- (1) 30 (2) $33\frac{1}{3}$
(3) $34\frac{2}{3}$ (4) 35

Ans : 2

Let the CP be Rs. 100. Then SP = Rs. 120

Let the marked price be Rs. x .

Then, 90% of x = Rs. 120

$$\Rightarrow x = \frac{120 \times 100}{90} = \frac{400}{3}$$

$$= 133\frac{1}{3}$$

It is $33\frac{1}{3}\%$ higher than the CP.

45. The difference between a single discount of 30% on Rs. 550 and two successive discounts of 20% and 10% on the same amount is

- (1) Nil (2) Rs. 11
(3) Rs. 22 (4) Rs. 44

Ans : 2

Case I : A single discount of 30%

Case II : Two successive discounts of 20% and 10%
Single equivalent discount

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \%$$

$$= 28\%$$

$$\text{Difference} = (30 - 28)\% = 2\%$$

∴ Required difference

$$= 2\% \text{ of Rs. } 550$$

$$= \text{Rs. } \frac{2 \times 550}{100} = \text{Rs. } 11.$$

46. A trader marks his goods at 40% above the cost price but allows a discount of 20% on the marked price. His profit per cent is :

- (1) 20% (2) 10%
(3) 8% (4) 12%

Ans : 4

Let the cost price be Rs. 110. Then,

marked price = Rs. 140.

Selling price = (100 - 20)% of

$$\text{Rs. } 140 = \frac{80 \times 140}{100} = \text{Rs. } 112$$

$$\therefore \text{Profit } \% = 12$$

47. The marked price of a watch is Rs. 800. A shopkeeper gives two successive discounts and sells the watch at Rs. 612. If the first discount is 10%, the second discount is :

- (1) 10% (2) 12%
(3) 15% (4) 20%

Ans : 3

Let the second discount be $x\%$.

Then, 90% of (100 - x)% of 800 = 612

$$\Rightarrow \frac{90}{100} \times \frac{100 - x}{100} \times 800 = 612$$

$$\Rightarrow 100 - x = \frac{612 \times 100}{90 \times 8} = 85$$

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

48. How much above the cost price should a man mark his goods, so that, after allowing a discount of 10% for cash payment, he may still make a profit of 8%?

- (1) 20% (2) 18%
(3) 28% (4) 25%

Ans : 1

Let C.P = Rs. 100

Then, S.P. = Rs. 108

Let marked price be Rs. x .

Then, (100 - 10)% of x = 108

$$\Rightarrow x = \frac{108 \times 100}{90} = \text{Rs. } 120$$

∴ Marked price = 20% above cost price

49. A person paid Rs. 17,000 for a motor - car after a single discount of 15%. If he is given successive discounts of 5% and 10% then how much he would pay?

- (1) Rs. 17000
 (2) Rs. 17,010
 (3) Rs. 17,100
 (4) Rs. 18,900

Ans : 3

$$85\% = 17,000$$

$$\therefore 100\% = \frac{17,000}{85} \times 100$$

$$= \text{Rs. } 20,000$$

Required SP

$$= 20,000 \times \frac{95}{100} \times \frac{90}{100}$$

$$= 180 \times 95 = \text{Rs. } 17100$$

50. A shopkeeper buys an article for Rs. 180. He wishes to gain 20% after allowing a discount of 10% on the marked price to the customer. The marked price will be

- (1) Rs. 210 (2) Rs. 240
 (3) Rs. 270 (4) Rs. 300

Ans : 2

$$SP = 180 \times \frac{120}{100} = \text{Rs. } 216$$

$$\therefore 90\% = 216$$

$$100\% = \frac{216}{90} \times 100 = \text{Rs. } 240$$

51. A fan is listed at Rs. 1500 and a discount of 20% is offered on the list price. What additional discount must be offered to the customer to bring the net price to Rs. 1104?

- (1) 8% (2) 10%
 (3) 12% (4) 15%

Ans : 1

After a discount of 20%,

Listed price = 80% of Rs. 1500

$$= \text{Rs. } \left(1500 \times \frac{80}{100} \right)$$

$$\Rightarrow \text{Rs. } 1200$$

Difference

$$= \text{Rs. } (1200 - 1104) = \text{Rs. } 96$$

Let $x\%$ of 1200 = 96

$$\Rightarrow x = \frac{96 \times 100}{1200} = 8$$

\therefore Second discount = 8%

52. The cost of manufacturing an article was Rs. 900. The trader wants to gain 25% after giving a discount of 10%. The marked price must be :

- (1) Rs. 1500 (2) Rs. 1250
 (3) Rs. 1200 (4) Rs. 1000

Ans : 2

CP = Rs. 900

\therefore S.P. = 125% of 900

$$= \text{Rs. } \left(\frac{900 \times 125}{100} \right) = \text{Rs. } 1125$$

Let the marked price be Rs. x

\therefore 90% of Rs. x = Rs. 1125

$$\Rightarrow x = \frac{1125 \times 100}{90}$$

$$= \text{Rs. } 1250$$

53. The list price of a clock is Rs. 160. A customer buys it for Rs. 122.40 after two successive discounts. If first discount is 10%, the second is

- (1) 10% (2) 12%
 (3) 15% (4) 18%

Ans : 3

Marked price = Rs. 160

After 10% discount

$$S.P. = \frac{90}{100} \times 160 = \text{Rs. } 144$$

Let other discount = $x\%$

$$\therefore \frac{(100-x)}{100} \times 144$$

$$= 122.40$$

$$\Rightarrow 100 - x$$

$$= \frac{12240}{144}$$

$$\Rightarrow 100 - x = 85$$

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

54. A shopkeeper offers 10% discount on the marked price of his articles and still makes a profit of 20%. What is the actual cost of the article marked Rs. 500 for him?

- (1) Rs. 440 (2) Rs. 425
 (3) Rs. 400 (4) Rs. 375

Ans : 4

Let the cost price of article

= Rs. x

$$\therefore 500 \times \frac{90}{100} = \frac{120}{100} \times x$$

$$\Rightarrow 450 = \frac{6x}{5}$$

$$\Rightarrow x = \frac{450 \times 5}{6}$$

$$= \text{Rs. } 375$$

55. A shopkeeper claims to sell all of his articles at a discount of 10%; but marks his articles by increasing the cost price of

each article by 20%. His gain on each article is

- (1) 6% (2) 8%
(3) 10% (4) 12%

Ans : 2

Let the C.P. be Rs. 100

Then, marked price = Rs. 120

S.P. = 90% of Rs. 120

$$= \frac{90 \times 120}{100} = \text{Rs. } 108$$

$$\therefore \text{Gain \%} = 8\%$$

- 56.** A single discount, equivalent to successive discounts of 30%, 20% and 10%, is

- (1) 50% (2) 49.60%
(3) 49.40% (4) 51%

Ans : 2

Equivalent single discount to successive discounts of 30% and 20%

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

$$44\%$$

Now, equivalent single discount to discounts of 44% and 10%

$$= 44 + 10 - \frac{44 \times 10}{100}$$

$$= (54 - 4.4) = 49.6\%$$

- 57.** A dealer offers a discount of 10% on the marked price of an article and still makes a profit of 20%. If its marked price is Rs. 800, then cost price of the article is

- (1) Rs. 900 (2) Rs. 800
(3) Rs. 700 (4) Rs. 600

Ans : 4

Let the cost price of the article = Rs. x

Marked price = Rs. 800

S.P. = 90% of Rs. 800

$$= \text{Rs.} \left(\frac{90 \times 800}{100} \right) = \text{Rs. } 720$$

Now, 120% of x = Rs. 720

$$\Rightarrow x = \frac{720 \times 100}{120} = \text{Rs. } 600$$

- 58.** A shopkeeper gives 12 per cent additional discount after giving an initial discount of 20 per cent on the marked price of a radio. If the sale price of the radio is Rs. 704, the marked price is

- (1) Rs. 844.40
(2) Rs. 929.28
(3) Rs. 1,044.80
(4) Rs. 1,000

Ans : 4

Let the marked price of the radio be Rs. x .

According to the question,

$$x \times \frac{80}{100} \times \frac{88}{100} = 704$$

$$\therefore x = \frac{704 \times 100 \times 100}{80 \times 88}$$

$$= \text{Rs. } 1000$$

- 59.** A shopkeeper after allowing a discount of 10 per cent on the marked price, makes a profit of 8 per cent. How much percent above the cost price is the marked price?

- (1) 8
(2) 18
(3) 20

(4) 24

Ans : 3

Let marked price be Rs. x .

$$\text{Then selling price} = x \times \frac{90}{100}$$

\therefore Cost price

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

$$\therefore \text{Difference} = x - \frac{5x}{6} = \frac{x}{6}$$

\therefore Required percentage

$$= \frac{x}{6} \times \frac{6}{5x} \times 100 = 20 \text{ percent}$$

- 60.** A shopkeeper gives two successive discounts on an article marked Rs. 450. The first discount given is 10 per cent. If the customer pays Rs. 344.25 for the article the second discount given is

- (1) 14 per cent
(2) 10 per cent
(3) 12 per cent
(4) 15 per cent

Ans : 4

Let the second discount be x percent.

According to the question,

$$450 \times \frac{100 - 10}{100} \times \frac{100 - x}{100}$$

$$= 344.25$$

$$\therefore 100 - x = 85$$

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

- 61.** A pen is listed for Rs. 12. A discount of 15% is given on it. A second discount is given bringing the price down to Rs.

8.16. The rate of second discount is

- (1) 20%
 (2) 15%
 (3) 18%
 (4) 25%

Ans : 1

Let the rate of second discount = $x\%$

After 15% discount

$$\text{Price of pen} = \frac{85}{100} \times 12$$

$$= \text{Rs. } 10.20$$

$$\text{Now, } 10.20 - 8.16 = \text{Rs. } 2.04$$

It is second discount.

$$\therefore \frac{x}{100} \times 10.20 = 2.04$$

$$\Rightarrow 10.2x = 204$$

$$\Rightarrow x = \frac{204}{10.2} = 20$$

62. The marked price of a shirt and trousers are in the ratio 1 : 2. The shopkeeper gives 40% discount on the shirt. If the total discount on the set of shirt and trousers is 30%, the discount, offered on the trousers is

- (1) 15% (2) 20%
 (3) 25% (4) 30%

(SSC Combined Graduate Level Prelim Exam. 04.02.2007 (First Sitting))

Ans : 3

Let the marked price of shirt be Rs. x and that of trousers be Rs. $2x$.

Let the discount on the trousers be $y\%$. Then,

$$x \times \frac{40}{100} + 2x \times \frac{y}{100} = 3x \times \frac{30}{100}$$

$$\Rightarrow 40x + 2xy = 90x$$

$$\Rightarrow 2y = 90 - 40$$

$$\Rightarrow y = \frac{50}{2} = 25\%$$

63. A dealer buys an article marked at Rs. 25,000 with 20% and 5% off. He spends Rs. 1,000 for its repair and sells it for Rs. 25,000. What is his gain or loss per cent?

- (1) Loss of 25%
 (2) Gain of 25%
 (3) Gain of 10%
 (4) Loss of 10%

Ans : 2

Equivalent discount

$$= \left(20 + 5 - \frac{20 \times 5}{100} \right) \% = 24\%$$

\therefore CP of article

$$= \text{Rs.} \left(25000 \times \frac{76}{100} \right)$$

$$= \text{Rs. } 19000$$

Repairs cost = Rs. 1000

$$\therefore \text{Actual CP} = 19000 + 1000$$

$$= \text{Rs. } 20000$$

$$\text{SP} = \text{Rs. } 25000$$

$$\text{Profit} = 25000 - 20000$$

$$= \text{Rs. } 5000$$

\therefore Gain%

$$= \frac{5000}{20000} \times 100 = 25\%$$

64. A company offers three types of successive discounts : (i)

25% and 15%, (ii) 30% and 10%, (iii) 35% and 5%. Which offer is the best for a customer?

- (1) First offer
 (2) Second offer
 (3) Third offer
 (4) Any one ; all are equally good

Ans : 3

First Type :

Equivalent discount

$$= \left(25 + 15 - \frac{25 \times 15}{100} \right) \%$$

$$= (40 - 3.75) \% = 36.25\%$$

Second Type :

Equivalent discount

$$= \left(30 + 10 - \frac{30 \times 10}{100} \right) \%$$

$$= (40 - 3) \% = 37\%$$

Third Type :

Equivalent discount

$$= \left(30 + 5 - \frac{35 \times 5}{100} \right) \%$$

$$= (40 - 1.75) \% = 38.25\%$$

Clearly, third offer is best for a customer.

65. An article is listed at Rs. 900 and two successive discounts of 8% and 8% are given on it. How much would the seller gain or lose, if he gives a single discount of 16%, instead of two discounts?

- (1) Gain of Rs. 4.76
 (2) Loss of Rs. 5.76
 (3) Gain of Rs. 5.76
 (4) Loss of Rs. 4.76

Ans : 2

Equivalent discount for two successive discounts of 8% and 8%

$$= \left(8 + 8 - \frac{8 \times 8}{100} \right) \%$$

$$= (16 - 0.64) \% = 15.36 \%$$

\therefore SP = (100 - 15.36)% of Rs. 900

$$= \text{Rs.} \left(\frac{84 \times 900}{100} \right) = \text{Rs.} 756$$

Certainly seller will lose in this case.

$$\therefore \text{Loss} = \text{Rs.} (761.76 - 756) = \text{Rs.} 5.76$$

66. The marked price of a watch is Rs. 800. A customer gets two successive discounts on the marked price, the first being 10%. The second discount, if the customer pays Rs. 612 of it, is

- (1) 12%
 (2) 10%
 (3) 15%
 (4) 14%

Ans : 3

Marked price = Rs. 800

First discount

$$= \frac{10}{100} \times 800 = \text{Rs.} 80$$

\therefore Price after it

$$= \text{Rs.} (800 - 80) = \text{Rs.} 720$$

Difference = 720 - 612

$$= \text{Rs.} 108$$

Let the 2nd discount be $x\%$

$$\therefore x\% \text{ of } 720 = 108$$

$$\Rightarrow x = \frac{108 \times 100}{720} = 15 \%$$

67. How much per cent more than the cost price should a shopkeeper mark his goods so that after allowing a discount of 20% on the marked price, he gains 10%?

- (1) 30% (2) 10%
 (3) 27.5% (4) 37.5%

Ans : 4

Let CP = Rs. 100

\therefore Then, S.P. = Rs. 110

Let marked price be Rs. x .

Then, 80% of x = Rs. 110

$$\Rightarrow \frac{80x}{100} = 110 \Rightarrow x = \frac{110 \times 100}{80}$$

$$= \text{Rs.} 137.50$$

\therefore Marked price

$$= 37.5\% \text{ above C.P.}$$

68. A dealer buys a car listed at Rs. 200000 at successive discounts of 5% and 10%. If he sells the car for Rs. 179550, then his profit is

- (1) 10% (2) 9%
 (3) 5% (4) 4%

Ans : 3

Equivalent discount

$$= 10 + 5 - \frac{10 \times 5}{100} = 14.5$$

\therefore CP (for buyer)

$$= 85.5\% \text{ of Rs. } 200000$$

$$= \text{Rs.} \left(\frac{85.5 \times 200000}{100} \right) = \text{Rs.} 171000$$

$$\text{SP} = \text{Rs.} 179550$$

$$\begin{aligned} \text{Gain} &= \text{Rs.} (179550 - 171000) \\ &= \text{Rs.} 8550 \end{aligned}$$

\therefore Gain %

$$= \frac{8550}{171000} \times 100 = 5\%$$

69. A trader marked an article at 10% above its cost price. For selling, he allowed a certain discounts and suffered a loss of 1%. The discount was

- (1) 9% (2) 10%
 (3) 11% (4) 12%

Ans : 2

Let the CP of article of be Rs. 100

\therefore Marked price = Rs. 110

Let the discount be $x\%$

Discount = Rs. 11

$$\therefore x\% \text{ of } 110 = 11$$

$$\Rightarrow \frac{110 \times x}{100} = 11 \Rightarrow x = \frac{1100}{110} = 10\%$$

70. An article listed at Rs. 800 is sold at successive discounts of 25% and 15%. The buyer desires to sell it off at a profit of 20% after allowing a 10% discount. What would be his list price?

- (1) Rs. 620 (2) Rs. 600
 (3) Rs. 640 (4) Rs. 680

Ans : 4

Effective discount

$$= 25 + 15 - \frac{25 \times 15}{100}$$

$$= 40 - 37.5 = 36.25\%$$

\therefore CP for buyer

$$= (100 - 36.25)\% \text{ of Rs. } 800$$

$$= \frac{63.75 \times 800}{100} = \text{Rs. } 510$$

∴ To gain 20%,

$$\text{SP} = \text{Rs.} \left(\frac{120 \times 510}{100} \right) = \text{Rs. } 612$$

Let the list price be Rs. x .

∴ 90% of $x = \text{Rs. } 612$

$$\Rightarrow \frac{90x}{100} = 612 \Rightarrow x = \frac{61200}{90}$$

= Rs. 680

71. The difference between a discount of 40% on Rs. 500 and two successive discounts of 36% and 4% on the same amount is

- (1) zero (2) Rs. 1.93
(3) Rs. 2.00 (4) Rs. 720

Ans : 4

Single equivalent discount of two successive discounts of

$$36\% \text{ and } 4\% = 36 + 4 - \frac{36 \times 4}{100}$$

$$= 40 - 1.44 = 38.56$$

Percentage difference

$$= 40 - 38.56 = 1.44$$

∴ Required difference

$$= 500 \times \frac{1.44}{100}$$

$$= \text{Rs. } 7.20$$

72. If a discount of 20% on the marked price of a shirt saves a man Rs. 150, how much did he pay for the shirt?

- (1) Rs. 600 (2) Rs. 650
(3) Rs. 500 (4) Rs. 620

Ans : 1

Let the marked price of the shirt be Rs. x .

According to the question,

$$x \times \frac{20}{100} = 150$$

$$\Rightarrow x = \frac{150 \times 100}{20} = 750$$

∴ Price paid = Rs. (750 – 150)
= Rs. 600

73. The marked price of a radio is 20% more than its cost price. If a discount of 10% is given on the marked price, the gain per cent is :

- (1) 15 (2) 12
(3) 10 (4) 8

Ans : 4

Let the cost price of the radio

= Rs. 100

∴ Marked price = Rs. 120

SP of the radio after allowing a discount of 10%

= 90% of Rs. 120

$$= \frac{120 \times 90}{100} = \text{Rs. } 108$$

$$\therefore \text{Profit \%} = \frac{8}{100} \times 100 = 8\%$$

74. Ravi buys an article with a discount of 25% on its marked price. He makes a profit of 10% by selling it at Rs. 660. The marked price of the article was :

- (1) Rs. 600 (2) Rs. 700
(3) Rs. 800 (4) Rs. 685

Ans : 3

CP of the article for Ravi

$$= 660 \times \frac{100}{110} = \text{Rs. } 600$$

Ravi bought the article at the discount of 25%

∴ 75% of marked price

= Rs. 600

$$\therefore \text{Marked price} = \frac{600 \times 100}{75}$$

= Rs. 800

75. A fan is listed at Rs. 1,400 and the discount offered is 10%. What additional discount must be given to bring the net selling price to Rs. 1,200?

- (1) $16\frac{2}{3}\%$ (2) 5%

- (3) $4\frac{16}{21}\%$ (4) 6%

Ans : 3

Marked price of the fan

= Rs. 1400

SP after allowing a discount of 10% = 90% of 1400

$$= \frac{1400 \times 90}{100} = \text{Rs. } 1260$$

Second discount

= Rs. (1260 – 1200) = Rs. 60

Let the second discount be $x\%$.

∴ $x\%$ of 1260 = 60

$$\Rightarrow x = \frac{60 \times 100}{1260} = \frac{100}{21} = 4\frac{16}{21}\%$$

76. The marked price of an electric iron is Rs. 300. The shopkeeper allows a discount of 12% and still gains 10%. If no discount is allowed, his gain per cent would have been :

- (1) 20 (2) 25

(3) 27 (4) 30

Ans : 2

SP of electric iron

= 88% of Rs. 300

$$= \text{Rs. } \frac{300 \times 88}{100} = \text{Rs. } 264$$

Profit = 10%

 \therefore CP of electric iron

$$= \frac{100}{110} \times 264 = \text{Rs. } 240$$

After no discount,

Gain = 300 - 240 = Rs. 60

$$\text{Gain per cent} = \frac{60}{240} \times 100 = 25$$

77. A shopkeeper marks his goods 30% above his cost price but allows a discount of 10% at the time of sale. His gain is

- (1) 21% (2) 20%
(3) 18% (4) 17%

Ans : 4

Let the CP of the article be Rs. 100

According to the question,

The marked price = Rs. 130

Discount = 10%

 \therefore SP = 90% of Rs. 130

$$= \frac{130 \times 90}{100} = \text{Rs. } 117$$

 \therefore Gain = 117 - 100 = Rs. 17 \therefore Gain per cent = 17% as the CP = Rs. 100

78. An article is listed at Rs. 920. A customer pays Rs. 742.90 for it after getting two successive discounts. If the rate of first

discount is 15%, the rate of 2nd discount is

- (1) 3% (2) 5%
(3) 8% (4) 12%

Ans : 2

Total discount

= Rs. (920 - 742.90)

= Rs. 177.10

First discount = 15%

 \therefore Discount = 15% of 920

$$= \frac{920 \times 15}{100} = \text{Rs. } 138$$

Price after this discount

= 920 - 138 = Rs. 782

Remaining discount

= 177.10 - 138 = Rs. 39.10

Let the second discount be $x\%$

$$\therefore \frac{782 \times x}{100} = 39.10$$

$$\Rightarrow x = \frac{39.10 \times 100}{782} = 5\%$$

79. An article is sold at a discount of 20% and an additional discount of 30% is allowed on cash payment. If Vidya purchased the article by paying Rs. 2240 in cash, the marked price of the article was

- (1) Rs. 4000 (2) Rs. 4368
(3) Rs. 4400 (4) Rs. 4480

Ans : 1Let the marked price of the article be Rs. x .

Equivalent discount for successive discounts of 30% and 20%

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

$$= (50 - 6) \% = 44 \%$$

$$= (100 - 44) \% \text{ of } x = 2240$$

$$\Rightarrow \frac{x \times 56}{100} = 2240$$

$$\Rightarrow x = \frac{2240 \times 100}{56}$$

$$= \text{Rs. } 4000$$

80. A retailer purchases a grinder at a discount of 15% and sells it for Rs. 1955 at a profit of 15%. The amount of discount received by the retailer from the wholesaler was

- (1) Rs. 270 (2) Rs. 290
(3) Rs. 300 (4) Rs. 330

Ans : 3

Let the marked price of the grinder be Rs. 100

SP after a discount of 15%

= Rs. 85

$$\text{SP to gain } 15\% = \frac{85 \times 115}{100}$$

If Rs. 97.75 is the SP, the marked price = Rs. 100

 \therefore If Rs. 1955 is the SP the

$$\text{marked price} = \frac{100}{97.75} \times 1955$$

$$= \text{Rs. } 2000$$

Amount of discount received by the retailer

= 15% of Rs. 2000

$$= \frac{2000 \times 15}{100}$$

$$= \text{Rs. } 300$$

81. A tradesman marks his goods at 25% above the cost price and allows purchasers a discount of

$12\frac{1}{2}\%$. His profit is

- (1) 8% (2) 8.5%
(3) 8.625% (4) 9.375%

Ans : 4

Let the CP of goods be Rs. 100

\therefore Marked price = Rs. 125

\therefore After allowing a discount of

$12\frac{1}{2}\%$ or $\frac{25}{2}\%$

SP = $\left(100 - \frac{25}{2}\right)\%$ of Rs. 125

$$= 125 \times \frac{175}{2} \% = \frac{125 \times 175}{200}$$

= Rs. 109.375

\therefore Gain = Rs (109.375 - 100)

= Rs. 9.375

As the CP is Rs. 100

Gain per cent = 9.375%

82. The marked price of watch was Rs. 820. A man bought the watch for Rs. 570.72 after getting two successive discounts, of which the first was 20%. The second discount was

- (1) 18% (2) 15%
(3) 13% (4) 11%

Ans : 3

Total discount

= Rs. (820 - 570.72)

= Rs. 249.28

First discount = $820 \times \frac{20}{100}$

= Rs. 164

\therefore Second discount

= Rs. (249.28 - 164)

= Rs. 85.28

Price of the article after first discount

= Rs. (820 - 164) = Rs. 656

If the second discount be $x\%$, then

$x\%$ of 656 = 85.28

$$\Rightarrow x = \frac{85.28 \times 100}{656} = 13\%$$

83. While selling a cooler, a shopkeeper gives a discount of 10% on the marked price. If he gives a discount of 12% he earns Rs. 35 less as profit. The marked price of the cooler is

- (1) Rs. 1,650 (2) Rs. 1,625
(3) Rs. 1,725 (4) Rs. 1,750

Ans : 4

Let the market price of the cooler be Rs. x

According to the question,

$(12 - 10)\%$ of $x = 35$

$$\Rightarrow x = \frac{3500}{2} = \text{Rs. } 1750$$

84. A trader gains 15% after selling an item at 10% discount on the printed price. The ratio of the cost price and printed price of the item is

- (1) 18 : 23 (2) 17 : 18
(3) 17 : 23 (4) 18 : 25

Ans : 1

Let the CP of article be Rs. x and its marked price be Rs. y .

According to the question,

90% of $y = 115\%$ of x

$$\Rightarrow \frac{y \times 90}{100} = \frac{x \times 115}{100}$$

$$\Rightarrow \frac{x}{y} = \frac{90}{115} = \frac{18}{23} \Rightarrow 18 : 23$$

85. A bicycle, marked at Rs. 2,000 is sold with two successive discount of 20% and 10%. An additional discounts of 5% is offered for cash payment. The selling price of the bicycle at cash payment is

- (1) Rs. 1,368 (2) Rs. 1,468
(3) Rs. 1,568 (4) Rs. 1,668

Ans : 1

Single equivalent discount for two successive discounts of 20% and 10%

$$= \left(20 + 10 - \frac{20 \times 10}{100}\right)\%$$

= 28%

Now, single discount for 28% and 5%

$$= \left(28 + 5 - \frac{28 \times 5}{100}\right)\%$$

= (33 - 1.4)% = 31.6%

\therefore Required selling price of bicycle at cash payment

= (100 - 31.6)% of Rs. 2000

$$= \frac{2000 \times 68.4}{100} = \text{Rs. } 1368$$

86. If a commission of 10% is given on the written price of an article, the gain is 20%. The gain per cent, when the commission is increased to 20%, will be

- (1) $6\frac{2}{3}$ (2) 5

(3) 8 (4) $5\frac{1}{3}$

Ans : 1

Case I

Let the CP of the article be Rs. 100 and the marked price be Rs. x .

According to the question,

$$90\% \text{ of } x = 120$$

$$\Rightarrow x = \frac{120 \times 100}{90} = \text{Rs. } \frac{400}{3}$$

Case II

$$\text{SP of the article} = 80\% \text{ of } \frac{400}{3}$$

$$= \frac{400}{3} \times \frac{80}{100} = \text{Rs. } \frac{320}{3}$$

$$\text{Gain} = \frac{320}{3} - 100$$

$$= \frac{320 - 300}{3} = \frac{20}{3}$$

$$\therefore \text{Gain \%} = \frac{20}{3} \% = 6\frac{2}{3} \%$$

87. The difference between a discount 40% on Rs. 500 and two successive discounts of 30% and 10% on the same amount is

- (1) Rs. 15 (2) 0
(3) Rs. 20 (4) Rs. 10

Ans : 1

Single equivalent discount of two consecutive discount of 30% and 10%

$$= 30 + 10 - \frac{30 \times 10}{100} = 37\%$$

\therefore Required difference = 40% of 500 – 37% of Rs. 500

$$= 3\% \text{ of Rs. } 500$$

$$= 3\% \text{ of Rs. } 500$$

$$= 500 \times \frac{3}{100} = \text{Rs. } 15$$

88. A dozen pair of socks quoted at Rs. 80 are available at a discount of 10%. How many pairs of socks can be bought for Rs. 24?

- (1) 4 (2) 5
(3) 3 (4) 6

Ans : 1

SP of 12 pairs of socks

$$= 90\% \text{ of Rs. } 80$$

$$= \frac{80 \times 90}{100} = \text{Rs. } 72$$

\therefore Number of pairs bought for

$$\text{Rs. } 24 = \frac{12 \times 24}{72} = 4$$

89. The marked price of a T.V. is Rs. 16,000. After two successive discounts it is sold for Rs. 11,400. If the first discount is 5%, then the rate of second discount is

- (1) 15% (2) 20%
(3) 30% (4) 25%

Ans : 4

After a discount of 5%

$$\text{SP} = \frac{95 \times 16000}{100}$$

$$= \text{Rs. } 15200$$

Let the second discount be $x\%$.

$$\therefore x\% \text{ of } 15200$$

$$= (15200 - 11400)$$

$$\Rightarrow \frac{x \times 15200}{100} = 3800$$

$$\Rightarrow x = \frac{3800 \times 100}{15200} = 25$$

\therefore Second discount = 25%

90. The difference between a discount of 30% on Rs. 2,000 and two successive discounts of 25% and 5% on the same amount is

- (1) Rs. 30 (2) Rs. 35
(3) Rs. 25 (4) Rs. 40

Ans : 3

Case I,

$$\text{Discount} = \frac{30 \times 2000}{100} = \text{Rs. } 600$$

Single equivalent discount for discounts of 25% and 5%

$$= \left(25 + 5 - \frac{25 \times 5}{100} \right) \%$$

$$= (30 - 1.25)\% = 28.75\%$$

$$\therefore \text{Discount} = \frac{28.75 \times 2000}{100}$$

$$= \text{Rs. } 575$$

$$\therefore \text{Difference} = \text{Rs. } (600 - 575)$$

$$= \text{Rs. } 25$$

91. A manufacturer marked an article at Rs. 50 and sold it allowing 20% discount. If his profit was 25%, then the cost price of the article was

- (1) Rs. 40 (2) Rs. 35
(3) Rs. 32 (4) Rs. 30

Ans : 3

Marked price = Rs. 50

$$\text{S.P. after discount} = 80\% \text{ of } 50 = \text{Rs. } 40$$

If the CP of article be Rs. x , then

$$\frac{125 \times x}{100} = 40$$

$$\Rightarrow x = \frac{40 \times 100}{125} = \text{Rs. } 32$$

92. A shopkeeper earns a profit of 12% on selling a book at 10% discount on the printed price. The ratio of the cost price and the printed price of the book is

- (1) 45 : 56 (2) 45 : 51
(3) 47 : 56 (4) 47 : 51

Ans : 1

Let the CP be Rs. 100.

\therefore SP = Rs. 112

If the marked price be Rs. x , then

90% of $x = 112$

$$\Rightarrow x = \frac{112 \times 100}{90} = \text{Rs. } \frac{1120}{9}$$

\therefore Required ratio

$$= 100 : \frac{1120}{9}$$

$$= 900 : 1120 = 45 : 56$$

93. If on a marked price, the difference of selling prices with a discount of 30% and two successive discounts of 20% and 10% is Rs. 72, then the marked price (in rupees) is

- (1) 3,600 (2) 3,000
(3) 2,500 (4) 2,400

Ans : 1

Let the marked price be Rs. x .

$$\therefore \text{In case I, SP} = \text{Rs. } \frac{70x}{100}$$

Single discount equivalent to successive discounts of 20% and 10%.

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

$$\therefore \text{S.P. in this case} = \text{Rs. } \frac{72x}{100}$$

$$\therefore \frac{72x}{100} - \frac{70x}{100} = \text{Rs. } 72$$

$$\Rightarrow \frac{2x}{100} = 72$$

$$\therefore x = \frac{72 \times 100}{2} = \text{Rs. } 3600$$

94. If an electricity bill is paid before due date, one gets a reduction of 4% on the amount of the bill. By paying the bill before due date a person got a reduction of Rs. 13. The amount of his electricity bill was

- (1) Rs. 125 (2) Rs. 225
(3) Rs. 325 (4) Rs. 425

Ans : 3

Let the amount of the bill be Rs. x .

$$\therefore \frac{4x}{100} = 13$$

$$\Rightarrow x = \frac{1300}{4} = \text{Rs. } 325$$

95. Successive discounts of 10%, 20% and 30% is equivalent to a single discount of

- (1) 60% (2) 49.6%
(3) 40.5% (4) 36%

Ans : 2

Tricky Approach

Single equivalent discount for successive discounts of 10% and 20%.

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

single equivalent discount for 28% and 30%.

$$= \left(28 + 30 - \frac{28 \times 30}{100} \right) \% = 49.6\%$$

96. Two successive discounts of 20% and 5% are equivalent to a single discount of

- (1) 25% (2) 24%
(3) 18% (4) 15%

Ans : 2

Equivalent single discount

$$= \left(20 + 5 - \frac{20 \times 5}{100} \right) \% = 24\%$$

97. A trader lists his articles 20% above their cost prices and allows a discount of 10% at the time of sale. His gain per cent is

- (1) 5 (2) 6
(3) 8 (4) 10

Ans : 3

CP of the article = Rs. 100

Marked price = Rs. 120

$$\text{S.P.} = \frac{90 \times 120}{100} = \text{Rs. } 108$$

\therefore Profit percent = 8

98. While selling a shirt, a shopkeeper gives a discount of 7%. If he had given a discount of 9% he would have got Rs. 15 less as profit. The marked price of the shirt is

- (1) Rs. 750 (2) Rs. 720
(3) Rs. 712.50 (4) Rs. 600

Ans : 1

Let the marked price of the shirt be Rs. x .

Difference of discounts = 2%

$\therefore 2\%$ of $x = 15$

$$\Rightarrow \frac{x \times 2}{100} = 15$$

$$\Rightarrow x = \frac{15 \times 100}{2} = \text{Rs. } 750$$

99. The selling price of an article is Rs. 1,920 and the discount given is 4%. The marked price of the article is

(1) Rs. 2,400 (2) Rs. 2,000

(3) Rs. 1,600 (4) Rs. 1,200

Ans : 2

If the marked price of the article be Rs. x , then

96% of $x = 1920$

$$\Rightarrow \frac{x \times 96}{100} = 1920$$

$$\Rightarrow x = \frac{1920 \times 100}{96} = \text{Rs. } 2000$$

100. The single discount, which is equivalent to three successive discounts of 25%, 20% and 10%, is

(1) 55% (2) 54%

(3) 46% (4) 45%

Ans : 3

Equivalent single discount for 25% and 20%

$$\left(25 + 20 - \frac{25 \times 20}{100} \right) \% = 40\%$$

Equivalent single discount for 40% and 10%

$$= \left(40 + 10 - \frac{40 \times 10}{100} \right) \% = 46\%$$

101. A shopkeeper marks the price of an item keeping 20% profit. If he offers a discount of $12\frac{1}{2}\%$ on the marked price, his gain percent will be

(1) 4.5 (2) 5

(3) 7.5 (4) 8

Ans : 2

Let the cost price be Rs. 100.

\therefore Marked price = Rs. 120

$$\text{SP} = 87\frac{1}{2}\% \text{ of Rs. } 120$$

$$= \frac{175}{200} \times 120 = \text{Rs. } 105$$

\therefore Gain per cent = 5%

102. A seller marks his goods 30% above their cost price but allows 15% discount for cash payment. His percentage of profit when sold in cash is

(1) 10.5 (2) 15

(3) 9 (4) 8.5

Ans : 1

Let the C.P. be Rs. 100

\therefore Marked price = Rs. 130

S.P. = 8.5% of Rs. 130

$$= \text{Rs. } \left(\frac{85 \times 130}{100} \right) = \text{Rs. } 110.5$$

\therefore Gain per cent = 10.5

103. Two successive discounts of 20% and 20% are equivalent to a single discount of

(1) 42% (2) 40%

(3) 36% (4) 34%

Ans : 3

Equivalent single discount

$$= \left(20 + 20 - \frac{20 \times 20}{100} \right) \% = 36\%$$

104. Two successive discounts of 10% and 5% are equivalent to a single discount of

(1) 14% (2) 14.25%

(3) 14.50% (4) 15%

Ans : 3

Single equivalent discount

$$= \left(10 + 5 - \frac{10 \times 5}{100} \right) \% \\ = (15 - 0.5) \% = 14.5\%$$

105. An article, which is marked `650, is sold for `572. The discount given is

(1) 12% (2) 13%

(3) 21% (4) 26%

Ans : 1

Discount = 650 - 572 = Rs. 78

If the discount be $x\%$ then

$$\frac{650 \times x}{100} = 78$$

$$\Rightarrow x = \frac{78 \times 100}{650} = 12\%$$

106. A man bought an article listed at `1,500 with a discount of 20% offered on the list price. What additional discount must be offered to the man to bring the net price to `1,104?

(1) 8% (2) 10%

(3) 12% (4) 15%

Ans : 1

SP after a discount of 20%

$$= \frac{1500 \times 80}{100} = \text{Rs. } 1200$$

Second discount

$$= 1200 - 1104$$

$$= \text{Rs. } 96$$

If the discount per cent be $x\%$ then

$$\frac{1200 \times x}{100} = 96$$

$$\Rightarrow x = \frac{9600}{1200} = 8$$

107. The marked price of a radio is `480. The shopkeeper allows a discount of 10% and gains 8%. If no discount is allowed, his gain percent would be

(1) 18% (2) 18.5%

(3) 20.5% (4) 20%

Ans : 4

If the CP of radio be Rs. x , then

$$\frac{108}{100} \text{ of } x = \frac{480 \times 90}{100}$$

$$\Rightarrow \frac{x \times 108}{100} = 432$$

$$\Rightarrow x = \frac{432 \times 100}{108} = \text{Rs. } 400$$

Gain per cent if no discount is

$$\text{allowed} = \frac{80}{400} \times 100$$

$$= 20\%$$

108. Marked price of an article is `275. Shopkeeper allows a discount of 5% and he gets a profit of 4.5%. The actual cost of the article is

(1) 250 (2) 225

(3) 215 (4) 210

Ans : 1

C.P. of article = Rs. x (let)

$$\therefore \frac{x \times 104.5}{100} = \frac{275 \times 95}{100}$$

$$\Rightarrow x \times 104.5 = 275 \times 95$$

$$\Rightarrow x = \frac{275 \times 95}{104.5} = \text{Rs. } 250$$

109. The difference between a discount of 40% on `500 and two successive discounts of 36%, 4% on the same amount is

(1) `0 (2) `2

(3) `1.93 (4) `7.20

Ans : 4

Single equivalent discount for 36% and 4%

$$= \left(36 + 4 - \frac{36 \times 4}{100} \right)$$

$$= (40 - 1.44)\% = 38.56\%$$

\therefore Required difference

$$= 1.44\% \text{ of } 500$$

$$= \frac{500 \times 1.44}{100} = \text{Rs. } 7.20$$

110. The cost price of an article is 64% of the marked price. The gain percentage after allowing a discount of 12% on the marked price is

(1) 37.5% (2) 48%

(3) 50.5% (4) 52%

Ans : 1

Marked price of article

$$= \text{Rs. } 100 \text{ (let)}$$

$$\therefore \text{C.P. of article} = \text{Rs. } 64$$

$$\therefore \text{S.P. of article} = \text{Rs. } 88$$

\therefore Profit per cent

$$= \frac{88 - 64}{64} \times 100$$

$$= 37.5\%$$

111. A shopkeeper allows a discount of 10% to his customers and still gains 20%. Find the marked price of the article which costs `450.

(1) `600 (2) `540

(3) `660 (4) `580

Ans : 1

Let the marked price of the article be Rs. x .

$$\therefore x \times \frac{90}{100} = \frac{450 \times 120}{100}$$

$$\Rightarrow \frac{9x}{10} = 540$$

$$\Rightarrow x = \frac{540 \times 10}{9} = \text{Rs. } 600$$

112. What single discount is equivalent to two successive discounts of 20% and 15%

(1) 35% (2) 32%

(3) 34% (4) 30%

Ans : 2

Single equivalent discount

$$= \left(x + y - \frac{xy}{100} \right) \%$$

$$= \left(20 + 15 - \frac{20 \times 15}{100} \right) \% = 32\%$$

113. While selling a watch, a shopkeeper gives a discount of 5%. If he gives a discount of 6%, he earns `15 less as profit. What is the marked price of the watch?

(1) `1,250 (2) `1,400

(3) `1,500 (4) `750

Ans : 3

Let the marked price of watch be Rs. x .

$$\therefore \frac{x \times 95}{100} - \frac{x \times 94}{100} = 15$$

$$\Rightarrow x = 15 \times 100 = \text{Rs. } 1500$$

114. The single discount equal to three consecutive discounts of 10%, 12% and 5% is

- (1) 26.27% (2) 24.76%
(3) 9% (4) 11%

Ans : 2

Single equivalent discount for 10% and 12%

$$= \left(12 + 10 - \frac{12 \times 10}{100} \right) \% = 20.8\%$$

Single equivalent discount for 20.8% and 5%

$$= \left(20.8 + 5 - \frac{20.8 \times 5}{100} \right) \%$$

$$= 24.76\%$$

115. For a certain article, if discount is 25% the profit is 25%. If the discount is 10%, then the profit it is

- (1) 50% (2) 40%
(3) 9% (4) $33\frac{1}{3}\%$

Ans : 1

If the marked price be Rs. x and cost price be Rs. 100, then,

$$\frac{x \times 75}{100} = 125$$

$$\Rightarrow x = \frac{125 \times 100}{75} = \text{Rs. } \frac{500}{3}$$

S.P. after a discount of 10%

$$= \frac{500}{3} \times \frac{90}{100} = \text{Rs. } 150$$

$$\therefore \text{Gain per cent} = 50\%$$

116. The price that Akbar should mark on a pair of shoes which costs him `1,200 to gain 12% after allowing a discount of 16% (in rupees) is

- (1) 1,344 (2) 1,433
(3) 1,600 (4) 1,500

Ans : 3

Let the marked price be Rs. x .

$$\therefore x \times \frac{84}{100} = \frac{1200 \times 112}{100}$$

$$\Rightarrow x \times \frac{84}{100} = 112 \times 12$$

$$\Rightarrow x = \frac{112 \times 1200}{84} = \text{Rs. } 1600$$

117. A shopkeeper makes a profit of 20% even after giving a discount of 10% on the marked price of an article. If marked price is `500 then the cost price of the article is

- (1) `350 (2) `375
(3) `425 (4) `475

Ans : 2

If the cost price of article be Rs. x then

$$\frac{500 \times 90}{100} = \frac{x \times 120}{100}$$

$$\Rightarrow 450 = \frac{6x}{5}$$

$$\Rightarrow 6x = 5 \times 450$$

$$\Rightarrow x = \frac{5 \times 450}{6} = \text{Rs. } 375$$

118. The true discount on a sum of money due 2 years hence at 5% is `15. Find the sum.

- (1) `150 (2) `165
(3) `170 (4) `160

Ans : 2

True discount

$$= \frac{\text{Amount} \times R \times T}{100 + (R \times T)}$$

$$\Rightarrow 15 = \frac{A \times 5 \times 2}{100 + 10}$$

$$\Rightarrow A = 11 \times 15 = \text{Rs. } 165$$

119. Two successive discounts of 5%, 10% are given for an article costing `850. Present cost of the article is (in `):

- (1) 725 (2) 726.25
(3) 700 (4) 650

Ans : 2

Single equivalent discount

$$= \left(15 + 10 - \frac{15 \times 10}{100} \right)$$

$$= 23.5\%$$

\therefore Cost of article after discount

$$= \frac{850 \times (100 - 14.5)}{100}$$

$$= \text{Rs. } 726.75$$

120. A shopkeeper purchased a chair marked at Rs. 800, at two successive discounts of 10% and 15% respectively. He spent Rs. 28 on transportation and sold the chair for Rs. 800. His gain percent is :

- (1) 40 (2) 30
(3) 25 (4) 14

Ans : 3

Single equivalent discount

$$= \left(15 + 10 - \frac{15 \times 10}{100} \right)$$

$$= 23.5\%$$

$$\therefore \text{Cost price} = \frac{800 \times 76.5}{100}$$

$$= \text{Rs. } 612$$

Actual C.P. = Rs. (612 + 28)

$$= \text{Rs. } 640$$

$$\therefore \text{Gain \%} = \frac{800 - 640}{640} \times 100$$

$$= \frac{160 \times 100}{640} = 25\%$$

121. A shop-keeper sells a badminton racket whose marked price is Rs. 30, at a discount of 15% and gives a shuttle cock costing Rs. 1.50 free with each racket. Even then he makes a profit of 20%. His cost price per racket, is

- (1) Rs. 21.00 (2) Rs. 21.25
(3) Rs. 20.00 (4) Rs. 19.75

Ans : 3

Discount = 15%

SP of racket = 85% of Rs. 30 = Rs. 25.50

One shuttle cock of Rs. 1.50 is free.

 \therefore Actual SP

$$= \text{Rs. } (25.50 - 1.50) = \text{Rs. } 24$$

He still gains 20%

$$\therefore \text{CP} = \frac{100}{120} \times 24 = \text{Rs. } 20$$

122. In order to maintain the price line a trader allows a discount of 10% on the marked price of an article. However, he still makes a profit of 17% on the cost price. Had he sold the article at the marked price, he would have earned a profit per cent of

- (1) 30% (2) 32%
(3) 33% (4) 35%

Ans : 1

Let the marked price be Rs. 100.

$$\therefore \text{S.P.} = 90\% \text{ of Rs. } 100$$

$$= \text{Rs. } 90$$

$$\text{Profit} = 17\%$$

$$\text{C.P.} = \text{Rs. } 90 \times \frac{100}{117}$$

$$= \text{Rs. } \frac{1000}{13}$$

If no discount is allowed,

$$\text{S.P.} = \text{Rs. } 100$$

$$\text{Profit} = \text{Rs. } \left(100 - \frac{1000}{13} \right)$$

$$= \text{Rs. } \frac{300}{13}$$

$$\therefore \text{Profit \%}$$

$$= \frac{300}{1000/13} \times 100 = 30\%$$

123. The marked price of an article is 20% more than its cost price. Then a discount of 10% is offered to the customer. The gain per cent is

- (1) 10% (2) 8%
(3) 9% (4) 15%

Ans : 2

Suppose CP = Rs. 100

Marked Price = Rs. 120

$$\text{SP} = 120 \times \frac{90}{100} = \text{Rs. } 108$$

$$\text{Profit} = 108 - 100 = 8\%$$

124. A trader sells his goods at a discount of 20%. He still makes a profit of 25%. If he sells the goods at the marked price only, his profit will be

- (1) 56.25% (2) 25.56%
(3) 50.25% (4) 54.25%

Ans : 1

Let the marked price = Rs. 100

$$\therefore \text{S.P.} = \text{Rs. } 80$$

$$\text{Profit} = 25\%$$

$$\therefore \text{CP} = \text{Rs. } \left(\frac{100}{125} \times 180 \right)$$

$$= \text{Rs. } 64$$

Profit after selling on marked price = 100 - 64 = Rs. 36

$$\therefore \text{Gain \%} = \frac{36}{64} \times 100$$

$$= 56.25\%$$

125. A shopkeeper lists the price of an article is `500. But he gives a certain discount which allows the buyer to pay `500 for the article including 10% sales tax. The rate of discount is

- (1) 10% (2) $10\frac{1}{11}\%$
(3) $9\frac{1}{11}\%$ (4) 11%

Ans : 3

Let the S.P. be Rs. x (without tax).

$$\therefore x + x \times \frac{10}{100} = \text{Rs. } 500$$

$$\Rightarrow \frac{11x}{10} = 500 \Rightarrow x = \text{Rs. } \frac{5000}{11}$$

$$\therefore \text{Discount} = 500 - \frac{5000}{11}$$

$$= \frac{500}{11}$$

Discount per cent

$$= \frac{500}{11 \times 500} \times 100 = \frac{100}{11}$$

$$= 9\frac{1}{11}\%$$

126. After allowing a discount of 16%, there was still a gain of 5%. Then the percentage of marked price over the cost price is

- (1) 15% (2) 18%
(3) 21% (4) 25%

Ans : 4

Let the C.P. of article be Rs. 100 and its marked price be Rs. x .

$$\therefore x \times \frac{84}{100} = 105$$

$$\Rightarrow x = \frac{105 \times 100}{84} = 125$$

\therefore Required percentage = 25

127. The discount series 10%, 20%, 40% is equivalent to a single discount of

- (1) 50% (2) 56.8%
(3) 60% (4) 62.28%

Ans : 2

Single equivalent discount for 10% and 20%

$$= 10 + 20 - \frac{20 \times 10}{100} = 28\%$$

Single equivalent discount for 28% and 40%

$$= \left(40 + 28 - \frac{28 \times 40}{100} \right) \%$$

$$= (68 - 11.2)\% = 56.8\%$$

128. A tradesman marks his goods at 25% above its cost price and allows purchasers a discount of $12\frac{1}{2}\%$ for cash payment. The profit, he thus makes, is

- (1) $9\frac{3}{8}\%$ (2) $9\frac{1}{2}\%$
(3) $8\frac{1}{2}\%$ (4) $8\frac{3}{8}\%$

Ans : 1

Let the cost price of article = Rs. 100

\therefore Marked price = Rs. 125

SP of the article

$$= \left(100 - \frac{25}{2} \right) \%$$
 of Rs. 125

$$= \frac{175}{2} \%$$
 of 125

$$= \frac{125 \times 175}{200} = \frac{875}{8}$$

$$= \text{Rs. } 109\frac{3}{8}$$

\therefore Gain per cent

$$= \left(109\frac{3}{8} - 100 \right) = 9\frac{3}{8}\%$$

129. A shopkeeper allows 4% discount on his marked price. If the cost price of an article is Rs. 100 and he has to make a

profit of 20%, then his marked price must be

- (1) Rs. 96 (2) Rs. 120
(3) Rs. 125 (4) Rs. 130

(SSC Data Entry Operator Exam. 31.08.2008)

Ans : 3

Let the marked price of the article be Rs. x

According to the question 96% of $x = 120\%$ of 100

$$\Rightarrow x \times \frac{96}{100} = \frac{100 \times 120}{100}$$

$$\Rightarrow x = \frac{100 \times 120}{96} = \text{Rs. } 125$$

130. A single discount equivalent to three successive discounts of 20%, 25% and 10% is

- (1) 55% (2) 50%
(3) 48% (4) 46%

Ans : 4

Single equivalent discount for the successive discounts of 20% and 25%

$$= \left(20 + 25 - \frac{20 \times 25}{100} \right) \% = 40\%$$

Single equivalent discount for the successive discounts of 40% and 10%

$$= \left(40 + 10 - \frac{40 \times 10}{100} \right) \% = 46\%$$

131. The marked price of an article is 20% more than its cost price. A discount of 20% is given on the marked price. In this kind of sale, the seller bears

- (1) no gain, no loss
(2) a loss of 4%
(3) a gain of 4%

(4) a gain of 8%

Ans : 2

Let the Cost price of the article be Rs. 100.

∴ Marked Price = Rs. 120

After a discount of 20%,

$$\text{Selling price} = 120 \times \frac{80}{100}$$

= Rs. 96

Clearly there will be a loss of 4%

132. The marked price of a radio is Rs. 4,800. The shopkeeper allows a discount of 10% and gains 8%. If no discount is allowed, his gain percent will be

- (1) 18 (2) 20
(3) 22 (4) 25

Ans : 2

Let CP of radio be Rs. x . According to the question,

$$\frac{108x}{100} = 4800 \times \frac{90}{100} = 4320$$

$$\Rightarrow x = \frac{4320 \times 100}{108} = \text{Rs. } 4000$$

If no discount is allowed, Gain per cent

$$= \frac{800}{4000} \times 100 = 20\%$$

133. What price should a shopkeeper mark on an article costing him `200 to gain 35% after allowing a discount of 25%?

- (1) `150 (2) `165
(3) `170 (4) `160

Ans : 4

Let the marked price be Rs. x .

$$\therefore \frac{x \times 75}{100} = 200 \times \frac{135}{100}$$

$$\Rightarrow x = \frac{200 \times 135}{75} = \text{Rs. } 360$$

134. A shopkeeper sells his goods at 15% discount. The marked price of an article whose selling price is `629 is :

- (1) `740 (2) `704
(3) `700 (4) `614

Ans : 1

Let the marked price be Rs. x .

$$\therefore \frac{x \times 85}{100} = 629$$

$$\Rightarrow x = \frac{629 \times 100}{85} = \text{Rs. } 740$$

135. The single discount, which is equivalent to successive discounts of 25% and 10%, is :

- (1) 35% (2) 34.5%
(3) 33% (4) 32.5%

Ans : 4

Single equivalent discount

$$= \left(25 + 10 - \frac{25 \times 10}{100} \right) \%$$

$$= 32.5\%$$

136. A trader marks his goods 40% above cost price and allows a discount of 25%. The profit he makes, is :

- (1) 15% (2) 10%
(3) 5% (4) 2%

(SSC Higher Secondary)

Ans : 3

Let the cost price be Rs. 100.

Marked price = Rs. 140

$$\text{S.P.} = \frac{75 \times 140}{100} = \text{Rs. } 105$$

∴ Profit per cent = 5%

137. With a 5% discount on the cost of sugar, a buyer could purchase 2 kg more sugar for `608. Selling price of sugar is:

- (1) `15.50 (2) `15
(3) `16.50 (4) `16

Ans : 4

Let the original S.P. of sugar

= Rs. x per kg.

S.P. after discount

$$= \text{Rs. } \frac{95x}{100} \text{ per kg}$$

$$= \text{Rs. } \frac{19x}{20} \text{ per kg}$$

$$\therefore \frac{608}{\frac{19x}{20}} - \frac{608}{x} = 2$$

$$\Rightarrow 608 \left(\frac{20}{19x} - \frac{1}{x} \right) = 2$$

$$\Rightarrow \frac{608}{19x} = 2 \Rightarrow x = \frac{608}{19 \times 2}$$

= Rs. 16

138. A dealer marks his goods 20% above their cost price. He then allows some discount on marked price so that he makes a profit of 10%. The rate of discount is

- (1) $10\frac{1}{3}\%$ (2) $9\frac{1}{3}\%$
(3) $8\frac{2}{3}\%$ (4) $8\frac{1}{3}\%$

Ans : 4

Cost price of article = Rs. 100
(let)

∴ Marked price of article

$$= \frac{100 \times 120}{100} = \text{Rs. } 120$$

S.P. of article = Rs. 110

∴ Discount = 120 – 110

$$= \text{Rs. } 10$$

∴ If discount = $x\%$, then

$$\frac{120 \times x}{100} = 10$$

$$\Rightarrow x = \frac{10 \times 100}{120} = \frac{25}{3} = 8\frac{1}{3}\%$$

139. When a shopkeeper gives 10% discount on the list price of a toy, his gain is 20%. If he had given a discount of 20%, his percentage of gain would have been

- (1) $6\frac{2}{3}$ (2) $8\frac{1}{3}$
(3) 10 (4) 15

Ans : 1

Let the cost price of toy be Rs. 100 and the marked price be Rs. x .

$$\therefore \frac{x \times 90}{100} = 120$$

$$\Rightarrow x = \frac{120 \times 100}{90} = \text{Rs. } \frac{400}{3}$$

S.P. after a discount of 20%

$$= 80\% \text{ of } \frac{400}{3}$$

$$= \frac{400 \times 80}{900} = \frac{320}{3} = 106\frac{2}{3}$$

∴ Profit percent

$$= 106\frac{2}{3} - 100 = 6\frac{2}{3}\%$$

140. The single discount equivalent to two successive discounts of 20% and 5% is

- (1) 24% (2) 25%
(3) 22% (4) 23%

Ans : 1

$$= \left(x + y - \frac{xy}{100} \right) \%$$

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

$$= (25 - 1) \% = 24 \%$$

141. The difference between a discount of 35% and two successive discounts of 20% on a certain bill was ₹22. The amount of the bill was

- (1) ₹200 (2) ₹220
(3) ₹1,100 (4) ₹2,200

Ans : 4

Single equivalent discount of two successive discounts of 20% each

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

$$= 36 \%$$

If the amount of the bill be Rs. x , then

$$\therefore (36 - 35) \% \text{ of } x = 22$$

$$\Rightarrow \frac{x}{100} = 22 \Rightarrow x = \text{Rs. } 2200$$

142. The marked price of a watch is ₹1,600. The shopkeeper gives successive discounts of 10% and $x\%$ to the customer. If the customer pays ₹1,224 for the watch, the value of x is

- (1) 18 (2) 20
(3) 22 (4) 25

Ans : 3

S.P. after first discount

$$= \frac{1600 \times 90}{100} = \text{Rs. } 1440$$

∴ Second discount

$$= 1440 - 1224$$

$$= \text{Rs. } 216$$

$$\frac{1440 \times x}{100} = 216$$

$$\therefore x = \frac{216 \times 100}{1440} = 15 \%$$

143. A discount of 24% on the marked price of an article is allowed and then the article is sold for ₹342. The marked price of the article is

- (1) ₹500 (2) ₹490
(3) ₹450 (4) ₹430

Ans : 3

If the marked price of article be Rs. x , then

$$\frac{x \times 76}{100} = 342$$

$$\Rightarrow x = \frac{342 \times 100}{76} = \text{Rs. } 450$$

144. A discount series of 10%, 20% and 40% is equal to a single discount of

- (1) 50% (2) 56.8%
(3) 70% (4) 70.28%

Ans : 2

Single equivalent discount for 10% and 20%

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

Single equivalent discount for 28% and 40%

$$= \left(28 + 40 - \frac{28 \times 40}{100} \right) \% \\ = (68 - 11.2)\% = 56.8\%$$

145. In a shop, shirts are usually sold at 40% above the cost price. During a sale, the shopkeeper offers a discount of 10% off the usual selling price. If he manages to sell 72 shirts for Rs. 13,608, then his cost price per shirt, in Rs. is

- (1) 210 (2) 150
(3) 149 (4) 125

Ans : 2

Let the CP of each shirt be Rs. 100, then SP = Rs. 140

$$\therefore \text{New SP} = \frac{140 \times 90}{100} \\ = \text{Rs. 126}$$

\therefore When S.P. is Rs. 126.

$$\text{CP} = \text{Rs. 100}$$

$$\therefore \text{When S.P. is Rs. } \frac{13608}{72}$$

then C.P.

$$= \frac{100}{126} \times \frac{13608}{72} = \text{Rs. 150}$$

146. A single discount equivalent to discount series 20%, 20% and 10% is

- (1) 50% (2) 48.4%
(3) 42.4% (4) 40.4%

Ans : 3

Single equivalent discount for 20% and 20%

$$= \left(20 + 20 - \frac{20 \times 20}{100} \right) \% = 36\%$$

Single equivalent discount for 36% and 10%

$$= \left(36 + 10 - \frac{36 \times 10}{100} \right) \% = 42.4\%$$

147. If a shopkeeper marks the price of goods 50% more than their cost price and allows a discount of 40%, what is his gain or loss percent?

- (1) Gain of 10%
(2) Loss of 10%
(3) Gain of 20%
(4) Loss of 20%

Ans : 2

C.P. of article = Rs. 100

Marked price = Rs. 150

$$\text{S.P.} = \frac{150 \times 60}{100} = \text{Rs. 90}$$

$$\text{Loss} = 100 - 90 = \text{Rs. 10}$$

i.e. 10%

148. The price of a certain television set is discounted by 10% and the reduced price is then discounted by 10%. This series of successive discounts is equivalent to a single discount of

- (1) 20% (2) 19%
(3) 18% (4) 11%

Ans : 2

Single equivalent discount

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

$$= 19\%$$

149. Rahim bought a T.V. with 20% discount on list price. Had he bought it with 25% discount he would have saved

Rs. 500. At what price did he buy the T.V?

- (1) Rs. 16,000
(2) Rs. 12,000
(3) Rs. 10,000
(4) Rs. 8,000

Ans : 4

If the marked price of T.V. be Rs. x , then,

$$\frac{x \times 5}{100} = 500$$

$$\Rightarrow x = \frac{500 \times 100}{5} = \text{Rs. 10000}$$

\therefore Initial S.P. of T.V.

$$= \frac{10000 \times 80}{100} = \text{Rs. 8000}$$

150. The single discount which is equivalent to successive discounts of 20%, 15% and 10% is

- (1) 32.7% (2) 34.2%
(3) 36.9% (4) 38.8%

Ans : 4

Single equivalent discount for 20% and 15%

$$= \left(20 + 15 - \frac{20 \times 15}{100} \right) \%$$

$$= 32\%$$

Single equivalent discount for 32% and 10%

$$= \left(32 + 10 - \frac{32 \times 10}{100} \right) \%$$

$$= 38.8\%$$

151. An article of cost price `8,000 is marked at `11,200. After allowing a discount of $x\%$ a profit of 12% is made. The value of x is

- (1) 30% (2) 28%
 (3) 25% (4) 27%

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Ans : 2

S.P. for a profit of 12%

$$= \frac{8000 \times 112}{100} = \text{Rs. } 8960$$

$$\therefore \text{Discount} = 11200 - 8960 \\ = \text{Rs. } 2240$$

If the discount per cent be x , then

$$= \frac{11200 \times x}{100} = 2240$$

$$x = \frac{2240 \times 100}{11200} = 20\%$$

152. The successive discounts of 10% and 20% are equivalent to a single discount of

- (1) 30% (2) 28%
 (3) 25% (4) 27%

Ans : 2

Single equivalent discount

$$= \left(10 + 20 - \frac{20 \times 10}{100} \right) \%$$

$$= 28\%$$

153. A dealer marks his goods at 40% above the cost price and allows a discount of 20% on the marked price. The dealer has a

- (1) loss of 20%
 (2) gain of 25%
 (3) loss of 12%
 (4) gain of 12%

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Ans : 4

Let the CP of article be Rs. 100.

$$\therefore \text{Marked price} = \text{Rs. } 140$$

$$\text{S.P.} = \frac{140 \times 80}{100} = \text{Rs. } 112$$

$$\therefore \text{Gain per cent} = 12$$

154. A trader marks his goods 45% above the cost price and gives a discount of 20% on the marked price. The gain % on goods he makes is :

- (1) 15 (2) 14
 (3) 29 (4) 16

Ans : 4

Let the C.P. of article be Rs. 100.

$$\Rightarrow \text{Marked price} = \text{Rs. } 145$$

$$\Rightarrow \text{S.P.} = \frac{145 \times 80}{100} = \text{Rs. } 116$$

$$\Rightarrow \text{Profit percent} = 16$$

155. The single discount equivalent to the discount series of 20%, 10% and 5% is :

- (1) 11.66% (2) 31.6%
 (3) 31.66% (4) 32%

Ans : 2

Single equivalent discount for 20% and 10%

$$= \left(10 + 20 - \frac{20 \times 10}{100} \right) \%$$

$$= 28\%$$

Single equivalent discount for 28% and 5%

$$= \left(28 + 5 - \frac{28 \times 5}{100} \right) \%$$

$$= 31.6\%$$

156. Successive discounts of $a\%$ and $b\%$ are equivalent to a single discount of

(1) $(a+b) \%$

(2) $\left(\frac{a+b}{2} \right) \%$

(3) $\left(a + b - \frac{ab}{100} \right) \%$

(4) $\left(\frac{a+b}{100} \right) \%$

Ans : 3

Effective discount

$$= \left(a + b - \frac{ab}{100} \right) \%$$

157. Maha Bazaar offers 20% discount on bags which have been marked 50% above the cost price. Amarnath pays Rs. 840 for a bag. Then the cost price of the bag is

- (1) Rs. 672 (2) Rs. 700
 (3) Rs. 790 (4) Rs. 810

Ans : 2

Let the cost price be Rs. 100.

$$\therefore \text{Marked price} = \text{Rs. } 150$$

$$\text{S.P.} = \frac{150 \times 80}{100} = \text{Rs. } 120$$

$$\therefore \text{Rs. } 120 \equiv \text{Rs. } 100$$

$$\therefore \text{Rs. } 840 \equiv \frac{100}{120} \times 840$$

$$= \text{Rs. } 700$$

158. A shopkeeper gains ₹56 on a toy after allowing 23% discount on its marked price. If his gain is 10%, then the marked price of the toy is :

- (1) ₹810 (2) ₹800
(3) ₹560 (4) ₹740

Ans : 2

Marked price of toy = Rs. x

$$\therefore \text{S.P.} = x \times \frac{77}{100} = \text{Rs.} \frac{77x}{100}$$

$$\text{C.P.} = x \times \frac{77}{100} \times \frac{100}{110} = \frac{7x}{10}$$

$$\therefore \frac{77x}{100} - \frac{7x}{10} = 56$$

$$\Rightarrow \frac{7x}{100} = 56$$

$$\Rightarrow x = \frac{100 \times 56}{7} = \text{Rs.} 800$$

159. Successive discounts of $p\%$ and $q\%$ on the catalogue price of an article is equivalent to a single discount of :

(1) $\left(x - y - \frac{xy}{100}\right)\%$

(2) $\left(p - q - \frac{pq}{100}\right)\%$

(3) $\left(p + q - \frac{pq}{100}\right)\%$

(4) $\left(p + q + \frac{pq}{100}\right)\%$

Ans : 3

Single equivalent discount

$$= \left(p + q - \frac{pq}{100}\right)\%$$

160. A merchant marks his goods 40% above the cost price and sells them at a discount of 15%. Find his gain %.

- (1) 25% (2) 22%
(3) 19% (4) 20%

Ans : 3

Let the C.P. of each article be Rs. 100.

\therefore Marked price = Rs. 140

$$\therefore \text{S.P.} = \frac{140 \times 85}{100}$$

$$= \text{Rs.} 119$$

\therefore Gain per cent = 19

161. A discount of 16% on the marked price of a book enables a man to buy a pen that costs Rs. 80. How much did he pay for the book?

- (1) Rs. 500 (2) Rs. 480
(3) Rs. 420 (4) Rs. 340

Ans : 1

$$\therefore 16\% \equiv \text{Rs.} 80$$

$$\therefore 100\% \equiv \frac{80 \times 100}{16}$$

$$= \text{Rs.} 500$$

162. After allowing a discount of 12% on the marked price of an article, it is sold for ₹880. Find its marked price.

- (1) ₹1,100 (2) ₹2,000
(3) ₹1,000 (4) ₹2,100

Ans : 3

Marked price

$$= \frac{10}{100 - 12} \times 880 = \text{Rs.} 1000$$

163. A trader marks his goods at 20% above the cost price. If he allows a discount of 5% for cash down payment, his profit percent for such a transaction is

- (1) 15 (2) 12
(3) 14 (4) 17

Ans : 3

Let C.P. be Rs. 100.

Marked price = Rs. 120

$$\text{S.P.} = \frac{120 \times 95}{100} = \text{Rs.} 114$$

Gain per cent = 14

164. A fan in a shop is offered at a discount of 10%. It is sold during clearance sale at 6% discount over the already discounted price at ₹846. The original marked price of the fan is

- (1) ₹900 (2) ₹946
(3) ₹850 (4) ₹896

Ans : 1

Marked price

$$= \frac{846 \times 100}{94} = \text{Rs.} 900$$

165. A trader allows a trade discount of $6\frac{1}{4}\%$ on the marked price of the goods and gets a net gain of 20% of the cost. By how much above the cost should the goods be marked for the sale?

- (1) 40% (2) 50%
(3) 60% (4) 70%

Ans : 3

C.P. of article = Rs. 100

Marked price = Rs. x

Single equivalent discount

$$= \left(20 + \frac{25}{4} - \frac{20 \times 25}{400} \right) \%$$

$$= 25\%$$

$$\therefore x \times \frac{75}{100} = 120$$

$$\Rightarrow x = \frac{120 \times 100}{75} = \text{Rs. } 160$$

$$\Rightarrow 160 - 100 = 60\%$$

166. A discount series of 10%, 20% and 40% is equal to a single discount of

- (1) 56.80% (2) 50%
(3) 70% (4) 43.20%

Ans : 1

Single equivalent discount for 10% and 20%

$$= 20 + 10 - \frac{20 \times 10}{100} = 28\%$$

Single equivalent discount for 28% and 40%

$$= 40 + 28 - \frac{40 \times 28}{100}$$

$$= 68 - 11.2$$

$$= 56.8\%$$

167. Tarun bought a T.V. with 20% discount on the labeled price. Had he bought it with 25% discount, he would have saved ₹500. At what price did he buy the T.V.?

- (1) ₹7,500 (2) ₹8,500
(3) ₹8,000 (4) ₹7,400

Ans : 3

If the marked price of T.V. be Rs. x , then

$$\frac{4x}{5} - \frac{3x}{4} = 500$$

$$\Rightarrow \frac{16x - 15x}{20} = 500$$

$$\Rightarrow \frac{x}{20} = 500$$

$$\Rightarrow x = 10000$$

\therefore Required cost price

$$= \frac{10000 \times 80}{100}$$

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

168. The marked price is 20% higher than cost price. A discount of 20% is given on the marked price. By this type of sale, there is

- (1) 4% loss
(2) 2% loss
(3) no loss no gain
(4) 4% gain

Ans : 1

Cost price = Rs. 100

Marked price = Rs. 120

$$\text{Selling price} = \frac{120 \times 80}{100}$$

$$= \text{Rs. } 96$$

\therefore Loss = Rs. 4 and loss per cent = 4%

169. A chair listed at ₹350 is available at successive discounts of 25% and 10%. The selling price of the chair is

- (1) ₹236.25 (2) ₹230.25
(3) ₹240.25 (4) ₹242.25

Ans : 1

Single equivalent discount

$$= \left(25 + 10 - \frac{25 \times 10}{100} \right) = 32.5\%$$

\therefore S.P. of chair

$$= \frac{350(100 - 32.5)}{100}$$

$$= \frac{350 \times 67.5}{100}$$

$$= \text{Rs. } 236.25$$

170. A tradesman marks his goods at such a price that after allowing a discount of 15%, he makes a profit of 20%. What is the marked price of an article whose cost price is ₹170?

- (1) ₹240 (2) ₹260
(3) ₹220 (4) ₹200

Ans : 1

If the marked price be Rs. = x , then

$$x \times \frac{85}{100} = \frac{170 \times 120}{100}$$

$$\Rightarrow x \times 85 = 170 \times 120$$

$$\Rightarrow x = \frac{170 \times 120}{85} = \text{Rs. } 240$$

171. A dealer marks his goods at 25% above the cost price and allows a discount of 10% for cash payment. His profit % is :

- (1) 17.5% (2) 15%
(3) 12.5% (4) 20%

Ans : 3

Cost price of article = Rs. 100

Marked price = Rs. 125

$$\therefore \text{S.P.} = \frac{125 \times 90}{100}$$

$$= \text{Rs. } 112.5$$

$$\therefore \text{Gain} = 112.5 - 100 = 12.5$$

= Gain percent

172. A trader marks his goods 25% above his cost price but allows his customers a discount of 10% on the marked price at the time of selling. By this, the trader gains :

- (1) 13.5% (2) 12.5%
(3) 12% (4) 15%

Ans : 2

Gain per cent

$$= \left(25 - 10 - \frac{25 \times 10}{100} \right) \%$$

$$= 12.5\%$$

173. A trader allows two successive discounts of 30% and 15% on selling an article. If he gets ₹476 for that article, find its marked price.

- (1) ₹700 (2) ₹400
(3) ₹900 (4) ₹800

Ans : 4

Single equivalent discount

$$= \left(30 + 15 - \frac{30 \times 15}{100} \right) \%$$

$$= 40.5\%$$

If the marked price be Rs. x , then

$$x \times \frac{100 - 40.5}{100} = 476$$

$$\Rightarrow x = \frac{476 \times 100}{59.5} = \text{Rs. } 800$$

174. Mr. A bought a refrigerator with $16\frac{2}{3}\%$ discount on the labeled price. Had he bought it with 25% discount, he would have saved ₹600. At what price did he buy the refrigerator?

(1) ₹6000 (2) ₹7200

(3) ₹7500 (4) ₹5000

Ans : 1

Difference of discounts

$$= 25 - \frac{50}{3}$$

$$= \frac{25}{3} \%$$

If the marked price = Rs. x , then

$$x \times \frac{25}{300} = 600$$

$$\Rightarrow x = \text{Rs. } 7200$$

∴ Required S.P.

$$= 7200 \times \left(100 - \frac{50}{3} \right) \%$$

$$= \frac{7200 \times 250}{300} = \text{Rs. } 6000$$

175. The selling price of a video game is Rs. 740 and the discount allowed is 7.5%. The marked price of the video game is :

- (1) Rs. 600 (2) Rs. 700
(3) Rs. 800 (4) Rs. 900

Ans : 3

Marked price

$$= \frac{100}{(100 - 7.5)} \times 740$$

$$= \frac{740 \times 100}{92.5} = \text{Rs. } 800$$

176. In selling an article, the single discount equivalent to two successive discounts of 25% and 5% is

- (1) 28.75% (2) 30%
(3) 27.5% (4) 26%

Ans : 1

Single equivalent discount

$$= \left(25 + 5 - \frac{25 \times 5}{100} \right) \%$$

$$= (30 - 1.25) \% = 28.75\%$$

177. To gain 8% after allowing a discount of 10%, by what per cent cost price should be hiked in the list price?

- (1) 9% (2) 11%
(3) 18% (4) 20%

Ans : 4

Let the cost price be Rs. 100 and marked price be Rs. x .

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

$$\Rightarrow \frac{9x}{10} = 108$$

$$\Rightarrow x = \frac{108 \times 10}{9} = 120$$

∴ Required percentage = 20%

178. A fan is listed at ₹150 and a discount of 20% is given. Then the selling price is

- (1) ₹180 (2) ₹150
(3) ₹120 (4) ₹110

Ans : 3

S.P. of the fan

$$= \frac{150 \times 80}{100} = \text{Rs. } 120$$

179. The discount equivalent to two successive discounts of 10% is

- (1) 15% (2) 19%
(3) 20% (4) 21%

Ans : 2

Single equivalent discount

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

$$= 19\%$$

180. The marked price of a table is ₹800. A retailer bought it after two successive discounts of 10% and 15%. He spent ₹13 on transportation and sold it for ₹875. His profit was

(1) 40% (2) 37%

(3) 28% (4) 25%

Ans : 1

C.P. of the table

$$= 800 \times \frac{90}{100} \times \frac{85}{100} = \text{Rs. } 612$$

$$\text{Actual C.P.} = 612 + 13$$

$$= \text{Rs. } 625$$

$$\text{Profit} = 875 - 625 = \text{Rs. } 250$$

∴ Profit per cent

$$= \frac{250}{625} \times 100 = 40\%$$

181. During a month-long annual sale, a shopkeeper sells his goods at a discount of 50%. But in the last week, he offers an additional discount of 40%. If the original price of a shirt is ₹x, then the price, in rupees, during the last week of the sale will be

(1) 90% of x (2) 70% of x

(3) 30% of x (4) 10% of x

Ans : 3

Single equivalent discount

$$= \left(50 + 40 - \frac{50 \times 40}{100} \right) \% = 70\%$$

∴ Required price of shirt

$$= 30\% \text{ of } x$$

182. A toy train is marked at ₹400 and sold at a discount of 8% during Ganesh puja. A shopkeeper announces a discount of 8%. The amount he will lose if he announces a single discount of 16% is

(1) ₹2.56 (2) ₹3.84

(3) ₹4.16 (4) ₹5.78

Ans : 1

Single equivalent discount for successive discounts of 8% and 8%

$$= \left(8 + 8 - \frac{8 \times 8}{100} \right) \%$$

$$= (16 - 0.64)\%$$

$$\therefore \text{Difference} = 0.64\%$$

$$\therefore \text{Loss} = 400 \times 0.64\%$$

$$= \frac{400 \times 64}{100 \times 100} = \text{Rs. } 2.56$$

183. Alex sold his goods after announcing two successive discounts of 30% each. The effective discount altogether is

(1) 52% (2) 49%

(3) 50% (4) 51%

Ans : 4

Single equivalent discount

$$= \left(30 + 30 - \frac{30 \times 30}{100} \right) \% = 51\%$$

184. If a dining table with marked price ₹6,000 was sold to a customer for ₹5,500, then the rate of discount allowed on the table is

(1) 10% (2) 8%

(3) $8\frac{1}{3}\%$ (4) 9%

Ans : 3

$$\text{Discount} = 6000 - 5500$$

$$= \text{Rs. } 500$$

If discount = x%, then

$$\frac{6000 \times x}{100} = 500$$

$$\Rightarrow x = \frac{500}{60} = \frac{25}{3} = 8\frac{1}{3}\%$$

185. How much percent above the cost price should a shopkeeper mark his goods so as to earn a profit of 32% after allowing a discount of 12% on the marked price?

(1) 50% (2) 40%

(3) 60% (4) 45%

Ans : 1

Let the C.P. be Rs. 100 and the marked price be Rs. x.

$$\therefore x \times \frac{88}{100} = 132$$

$$\Rightarrow x = \frac{132 \times 100}{88}$$

$$= 150 \text{ i.e., more by } 50\%$$

186. Ramesh bought 10 cycles for ₹500 each. He spent ₹2,000 on the repair of all cycles. He sold five of them for ₹750 each and the remaining for ₹550 each. Then the total gain or loss % is

(1) Gain of $8\frac{1}{3}\%$

(2) Loss of $8\frac{1}{3}\%$

(3) Gain of $7\frac{2}{3}\%$

(4) Loss of $7\frac{1}{7}\%$

Ans : 4

Total actual C.P.

$$= \text{Rs. } (500 \times 10 + 2000)$$

$$= \text{Rs. } 7000$$

Total S.P.

$$= \text{Rs. } (5 \times 750 + 5 \times 550)$$

$$= \text{Rs. } (3750 + 2750)$$

$$= \text{Rs. } 6500$$

$$\text{Loss} = 7000 - 6500 = \text{Rs. } 500$$

$$\text{Loss percent} = \frac{500}{7000} \times 100$$

$$= \frac{50}{7} = 7\frac{1}{7}\%$$

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