Chapter : 10. PROFIT AND LOSS

Exercise : 10A

Question: 1

Find the gain or

Solution:

(i) CP = Rs.620 and SP =Rs.713

Since SP is more than CP. So, it is a case of Gain.

Gain = SP- CP

= 713 - 620

= 93

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{93 \times 100}{620}$$

= 15%

(ii) CP = Rs.675 and SP = Rs.630

Since CP is more than SP. So, it is a case of Loss.

Loss = CP- SP

= 675 - 630

= 45

$$Loss\% = \frac{Loss \times 100}{CP}$$

$$= \frac{45 \times 100}{675}$$

= 6.66%

(iii) CP = Rs.345 and SP=Rs.372.60

Since SP is more than CP. So, it is a case of Gain.

Gain = SP- CP

= 372.60 - 345

= 27.60

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{27.60 \times 100}{345}$$

= 8%

(iv) CP = Rs.80 and SP = Rs.76.80

Since CP is more than SP. So, it is a case of Loss.

Loss = CP- SP

= 80 – 76.80

= 3.20

$$Loss\% = \frac{Loss \times 100}{CP}$$

$$= \frac{3.20 \times 100}{80}$$

= 4%

Question: 2

Find the selling

Solution:

(i) CP = Rs.1650 and gain = 4%

$$SP = \frac{100 + Gain\%}{100} \times CP$$
$$= \frac{100 + 4}{100} \times 1650$$
$$= \frac{104}{100} \times 1650$$

= 1716

So, Selling Price will be Rs.1716.

(ii) CP = Rs.915 and gain = $6\frac{2}{3}$ %

$$SP = \frac{100 + Gain\%}{100} \times CP$$
$$= \frac{100 + \frac{20}{3}}{100} \times 915$$
$$= \frac{\frac{320}{3}}{100} \times 915$$

= 976

So, Selling Price will be Rs.976.

(iii) CP =Rs.875 and loss = 12%

$$SP = \frac{100 - Loss\%}{100} \times CP$$
$$= \frac{100 - 12}{100} \times 875$$
$$= \frac{88}{100} \times 875$$

So, Selling Price will be Rs.770.

(iv) CP = Rs.645 and loss =$13\frac{1}{3}$ %

$$SP = \frac{100 - Loss\%}{100} \times CP$$
$$= \frac{100 - \frac{40}{3}}{100} \times 645$$
$$= \frac{\frac{260}{3}}{100} \times 645$$
$$= \frac{260}{300} \times 645$$

= 559

So, Selling Price will be Rs.559.

Question: 3

Find the cost pri

Solution:

(i) SP = Rs.1596 and gain = 12%

$$CP = \frac{100}{100 + Gain\%} \times SP$$
$$= \frac{100}{100 + 12} \times 1596$$

= 1425

So, Cost Price (CP) will be Rs.1425.

(ii) SP = Rs.2431 and loss = $6\frac{1}{2}$%

$$CP = \frac{100}{100 - Loss\%} \times SP$$
$$= \frac{100}{100 - \frac{13}{2}} \times 2431$$
$$= \frac{100}{\frac{200 - 13}{2}} \times 2431$$
$$= \frac{100}{\frac{187}{2}} \times 2431$$
$$= \frac{200}{187} \times 2431$$

= 2600

So, Cost Price will be Rs.2600.

(iii) SP = Rs.657.60 and loss = 4%

$$CP = \frac{100}{100 - Loss\%} \times SP$$
$$= \frac{100}{100 - 4} \times 657.60$$
$$= \frac{100}{96} \times 657.60$$

= 685

So, Cost Price will be Rs.685.

(iv) SP = Rs.34.40 and gain = $7\frac{1}{2}$%

$$CP = \frac{100}{100 + Gain\%} \times SP$$
$$= \frac{100}{100 + \frac{15}{2}} \times 34.40$$
$$= \frac{100}{\frac{215}{2}} \times 34.40$$
$$= \frac{200}{215} \times 34.40$$

= 32

So, Cost Price (CP) will be Rs.32.

Question: 4

Manjit bought an

Solution:

Total Cost of an Iron Safe = Purchase Cost + Transportation

= 12160 + 340

= 12500

Cost Price (CP) of Iron Safe = Rs.12500

Selling Price (SP) of an Iron Safe = Rs.12875

Gain on Sell = SP – CP

= 12875-12500

= 375

Gain Percent = $Gain\% = \frac{Gain \times 100}{CP}$

$= \frac{375 \times 100}{12500}$

= 3%

So, Gain Percent on Iron Safe is 3%.

Question: 5

Robin purchased a

Solution:

Actual Price of an old car = Purchase Price + Overheads (Like Repairing Cost, Insurance)

= 73500 + 10300 + 2600

= 86400

Cost Price (CP) = Rs.86400

Selling Price (SP) = Rs.84240

Since, CP > SP. So, this will be considered as Loss.

Loss = CP – SP

= 86400 – 84240

= 2160

Hence,

$Loss\% = \frac{Loss \times 100}{CP}$

$= \frac{2160 \times 100}{86400}$

= 2.5%

So, Loss percent is 2.5%

Question: 6

Hari bought 20 kg

Solution:

Total Weight of Rice = 20 + 25

= 45 Kg

Total Cost of both varieties of Rice = (20 × 36) + (25 × 32)

= 720 + 800

= 1520

So, CP of Rice = Rs.1520

Selling Price (SP) of Rice = Wt. × Rate

= 45 × 38

= 1710

Gain = SP – CP

= 1710 – 1520

= Rs.190

Gain Percent = $Gain\% = \frac{Gain \times 100}{CP}$

$= \frac{190 \times 100}{1520}$

$= \frac{19000}{1520}$

= 12.5%

So, Gain Percent in whole transaction is 12.5%.

Question: 7

Coffee costing! 2

Solution:

Let × be the common multiple.

Cost of 5 Kg of Coffee => 5 × = 250 × 5 = Rs.1250

Cost of 2 kg of Chicory => 2 × = 75 × 2 = Rs.150

Cost of Mixture is;

5 × + 2 × = 1250 + 150

7 × = 1400

× = 1400/7 = Rs.200

So, CP of Mixture = Rs.200

And SP of Mixture = Rs.230

Since, SP > CP. So, it is a case of Gain.

Gain = SP – CP

= 230 – 200

= Rs.30

Gain Percent = $Gain\% = \frac{Gain \times 100}{CP}$

$= \frac{30 \times 100}{200}$

= 15%

Question: 8

If the selling pr

Solution:

Let CP of 17 bottles = Rs.100.

CP of 17 bottles = SP of 16 bottles = Rs.100

SP of 17 bottles = $=\frac{100}{16}\times 17$

= Rs.106.25

Gain = SP – CP

= 106.25 – 100

= 6.25

$Gain\% = \frac{Gain \times 100}{CP}$

$= \frac{6.25 \times 100}{100}$

= 6.25%

Question: 9

The cost price of

Solution:

Let SP of 15 candles = Rs.100.

CP of 12 candles = SP of 15 candles = Rs.100

CP of 15 candles = $=\frac{100}{12}\times 15$

= Rs.125

Loss = CP – SP

= 125 – 100

= 25

$Loss\% = \frac{Loss \times 100}{CP}$

$= \frac{25 \times 100}{125}$

= 20%

Question: 10

By selling 130 ca

Solution:

Let × be the price of a cassette.

Selling Price of 5 cassettes = 5x.

Selling Price of 130 cassettes = 130x.

Cost Price of 130 cassettes = 130 × – 5x

= 125x

Gain = SP - CP

= 130 × – 125x

= 5x

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{5x \times 100}{125x}$$

$$= \frac{500x}{125x}$$

= 4%

Question: 11

By selling 45 lem

Solution:

Let × be the price of a lemons.

Selling Price of 3 lemons = 3x.

Selling Price of 45 lemons = 45x.

Cost Price of 45 lemons = 45 × + 3x

= 48x

Loss = CP - SP

= 48 × – 45x

= 3x

$$Loss\% = \frac{Loss \times 100}{CP}$$

$$= \frac{3x \times 100}{48x}$$

$$= \frac{300x}{48x}$$

= 6.25%

Question: 12

Oranges are bough

Solution:

CP of 6 oranges = Rs.20

CP of 1 orange = Rs. 20/6

SP of 4 oranges = Rs.18

SP of 1 orange = Rs. 18/4

Gain = SP –CP

$$= \frac{18}{4} - \frac{20}{6}$$

$$= \frac{54 - 40}{12}$$

$$= \frac{7}{6}$$

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{\frac{7}{6} \times 100}{\frac{20}{6}}$$

$$= \frac{\frac{700}{6}}{\frac{20}{6}}$$

= 35%

Question: 13

A vendor purchase

Solution:

SP of 1 Banana = 36/10

= Rs.3.6

SP of 1 Dozen Banana = 3.6 × 12

= Rs.43.20

CP of 1 Dozen Banana = Rs.40

Gain = SP – CP

= 43.20 – 40

=3.2

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{3.2 \times 100}{40}$$

= 8%

Question: 14

A man bought appl

Solution:

CP of 1 Apple = 75/10

= Rs.7.5

CP of 1 Dozen Apple = 7.5 × 12

= Rs.90

SP of 1 Dozen Apple = Rs.75

Loss = CP – SP

= 90 - 75

= 15

$$Loss\% = \frac{Loss \times 100}{CP}$$

$$= \frac{15 \times 100}{90}$$

= 16.66%

Question: 15

A man purchased s

Solution:

Let the numbers of egg is x.

CP of egg = Rs.16x/3

SP of egg = Rs.36x/5

Gain = SP - CP

$$=\left(\frac{36x}{5}-\frac{16x}{3}\right)=168$$

$$=\left(\frac{36x}{5}-\frac{16x}{3}\right)$$

$$=\frac{108x-80x}{15}=168$$

$$\therefore 28x=168\times15$$

$$\therefore x=\frac{2520}{28}=90$$

So, the numbers of egg are 90.

Question: 16

A dealer sold a c

Solution:

(i) Let × be the CP of Camera.

SP of Camera = x + 1x/8 = 1080

× + x/8 = 1080

9x/8 = 1080

x= (1080 × 8) / 9

= 960.

So, the Cost Price (CP) of camera is Rs.960.

(ii) Gain = SP – CP

= 1080 – 960

= 120

$$Gain\%=\frac{Gain\times100}{CP}$$

$$=\frac{120\times100}{960}$$

= 12.5%

Question: 17

Meenakshi sells a

Solution:

(i) Let × be the CP of Pen.

SP of Pen = x- 1x/10 = 54

X- X/10 = 54

9x/10 = 54

X= (54 × 10) / 9

= 60.

So, the Cost Price (CP) of Pen is Rs.60.

(ii) Loss = CP – SP

= 60 – 54

= 6

$$Loss\% = \frac{Loss \times 100}{CP}$$

$$= \frac{6 \times 100}{60}$$

= 10%

Question: 18

A dealer gets Rs.

Solution:

Let × be the CP.

In case of 10% loss, SP will be (x-x/10) = 9x/10

In case of 10% profit, SP will be (× + x/10) = 11x/10

Difference when item is sold between profit and loss = Rs.940

11x/10 – 9x/10 = 940

2x/10 = 940

× = (940 × 10) / 2

= Rs.4700

So, Cost Price of table is Rs.4700.

Question: 19

A dealer gets 56

Solution:

Let × be the Cost Price of Chair.

SP when chair is sold at gain of 15% = × + 15x/100 = 115x/100

SP when chair is sold at gain of 8% = × + 8x/100 = 108x/100

115x/100 – 108x/100 = 56

7x/100 = 56

× = (56 × 100)/7

= 800

So, the cost price of Chair is Rs.800

Question: 20

A cycle was sold

Solution:

Let × be the Cost Price of Cycle.

SP when cycle is sold at gain of 14% = × + 14x/100 = 114x/100

SP when cycle is sold at gain of 10% = × + 10x/100 = 110x/100

114x/100 – 110x/100 = 260

4x/100 = 260

× = (260 × 100)/4

= 6500

So, the cost price of Cycle is Rs.6500

Question: 21

Sonu buys 40 kg o

Solution:

CP of total wheat = 40 × 12.50 + 30 × 14

= 500 + 420

= Rs.920

Total Weight of Wheat = 40 kg + 30 kg

= 70 kg

$$SP = \frac{100 + Gain\%}{100} \times CP$$

$$SP = \frac{100 + 5}{100} \times 920$$

= Rs.966

So, to gain 5% on wheat SP will be Rs.966

Rate for 1 kg wheat = 966/70

= Rs.13.80

Question: 22

Wasim bought two

Solution:

CP of first bat = Rs.840

SP of first bat $= \frac{100 + Gain\%}{100} \times CP$

$= \frac{100 + 15}{100} \times 840$

= (115 × 840) /100

= Rs.966

CP of second bat = Rs.360

SP of second bat

$= \frac{100 - Loss\%}{100} \times CP$

$= \frac{100 - 5}{100} \times 360$

= Rs.342

CP of both the bat = 840 + 360

= Rs.1200

SP of both bats = 966 + 342

= Rs.1308

It is a case of Gain because SP is more than CP.

Gain = SP – CP

= 1308 - 1200

= Rs108

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{108 \times 100}{1200}$$

= 9%

Question: 23

Hema bought two p

Solution:

CP of first jeans = Rs.1450

SP of first jeans $= \frac{100 + Gain\%}{100} \times CP$

$$= \frac{100 + 8}{100} \times 1450$$

$$= \frac{108 \times 1450}{100}$$

= Rs.1566

CP of second jeans = Rs.1450

SP of second jeans $= \frac{100 - Loss\%}{100} \times CP$

$$= \frac{100 - 4}{100} \times 1450$$

$$= \frac{96}{100} \times 1450$$

= Rs.1392

CP of both the bat = 1450 + 1450

= Rs.2900

SP of both bats = 1566 + 1392

= Rs.2958

It is a case of Gain because SP is more than CP.

Gain = SP – CP

=2958 - 2900

= Rs58

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{58 \times 100}{2900}$$

= 2%

Question: 24

A grocer purchase

Solution:

CP of 200kg Rice = 200 × 25

= Rs.5000

CP 0f 80 kg Rice = 80 × 25

= Rs.2000

SP of 80Kg rice sold at gain of 10%

$$= \frac{100 + Gain\%}{100} \times CP$$

$$= \frac{100 + 10}{100} \times 2000$$

$$= \frac{110}{100} \times 2000$$

= Rs.2200

CP of 40 kg Rice sold @4% loss = 40 × 25

= Rs.1000

SP of 40 Kg Rice sold @4% loss $= \frac{100 - Loss\%}{100} \times CP$

$$= \frac{100 - 4}{100} \times 1000$$

= Rs.960

SP of Rice for Gaining 8% on total value

$$= \frac{100 + Gain\%}{100} \times CP$$

$$= \frac{100 + 8}{100} \times 5000$$

$$= \frac{108}{100} \times 5000$$

= Rs.5400

Total Wt. of Rice Sold = 80 + 40 = 120 Kg

Remaining Wt. of Rice to be Sold

= 200 - 120

= 80 Kg

Total amount obtained from Selling Rice

= 2200 + 960

= Rs.3160

Difference of Amount = 5400 – 3160

= Rs.2240

New Rate of Rice will be = Rs.2240 / 80

= Rs.28

Question: 25

If the selling pr

Solution:

Let × be the CP of TV Set

CP = x

SP = (x) × 6/5

= 6x/5

Gain = SP –CP

= 6x/5 – x

= x/5

$$Gain\% = \frac{Gain \times 100}{CP}$$

= (x/5 × 100) / x

= 20%

So, If TV set is sold at 6/5 price of its CP. Then Gain percent will be 20%.

Question: 26

If the selling pr

Solution:

Let × be the CP of Flower Vase

CP = x

SP = (x) × 5/6

= 5x/6

Loss = CP –SP

= × – 5x/6

= x/6

Loss Percent = (Loss × 100) / CP

= (x/6 × 100) / x

= 100/6

= 16.66%

So, If Flower vase set is sold at 5/6 price of its CP. Then Loss percent will be 16.66%.

Question: 27

By selling a bouq

Solution:

Let × be the CP of bouquet.

SP = Rs.322

$$SP = \frac{100 + Gain\%}{100} \times CP$$

$$322 = \frac{100 + 15}{100} \times x$$

$$322 = \frac{115x}{100}$$

$$x = \frac{322 \times 100}{115}$$

= 280

CP of bouquet = Rs.280

Now, to sell bouquet on25% gain, Selling Price will be

$$SP = \frac{100 + Gain\%}{100} \times CP$$

$= \frac{100+25}{100} \times 280$

$= \frac{125}{100} \times 280$

= Rs.350

Question: 28

By selling an umb

Solution:

Let x be the CP of an umbrella

$SP = \frac{100 - Loss\%}{100} \times CP$

$336 = \frac{100-4}{100} \times x$

$336 = \frac{96x}{100}$

=Rs.350

So, CP of an umbrella is Rs.350.

New SP to gain 4%

$SP = \frac{100 + Gain\%}{100} \times CP$

$= \frac{100+4}{100} \times 350$

$= \frac{104}{100} \times 350$

= Rs.364

So, to gain 4% on Umbrella new Selling Price will be Rs.364.

Question: 29

A radio is sold f

Solution:

Let × be the CP of a Radio

$SP = \frac{100 - Loss\%}{100} \times CP$

$3120 = \frac{100-4}{100} \times x$

$3120 = \frac{96x}{100}$

$x = \frac{3120 \times 100}{96}$

So, CP of a Radio is Rs.3250.

New SP = Rs.3445

Since SP > CP, it will be a case of Gain

Gain = SP – CP

= 3445 – 3250

= Rs.195

$$Gain\% = \frac{Gain \times 100}{CP}$$

= (195 × 100) / 3250

= 6%

So, if Radio is sold at Rs.3445. Gain Percent will be 6%.

Question: 30

Lwani sold two sa

Solution:

S.P of each sarees = Rs. 1980**1st Saree:**S.P = Rs. 1980Gain = 10%Let C.P = xTherefore,

$x + \frac{10}{100} \times x = 1980$

$\frac{110x}{100} = 1980$ x = Rs. 1800**2nd Saree:**S.P = Rs. 1980Loss = 10%Let the C.P = xTherefore,

$x = \frac{1980 \times 100}{110}$

$x - \frac{10}{100} \times x = 1980$

$\frac{90x}{100} = 1980$ x = Rs. 2200Now, total S.P = 1980 + 1980 = Rs. 3960Total C.P = 2200 +

$x = \frac{1980 \times 100}{90}$

1800 = Rs.. 4000Total Loss = C.P - S.P = 4000 - 3960 = Rs. 40Also,

$$Loss\ \% = \frac{Loss}{C.P} \times 100$$

$$Loss\ \% = \frac{40}{4000} \times 100 = 1\%$$

Question: 31

A shopkeeper sold

Solution:

SP of first fan = Rs.1140

C.P of first fan $= \frac{S.P \times 100}{(100 + Gain\%)}$ $C.P = \frac{1140 \times 100}{(100 + 14)} = Rs.1000$

= Rs.1000

SP of second fan = Rs.1140C.P of second fan,

$$= \frac{S.P \times 100}{(100 - Loss\%)}$$

$$C.P = \frac{1140 \times 100}{(100 - 5)} = \frac{1140 \times 100}{95} = 1200$$

= Rs. 1200

SP of both fans = 1140 + 1140

= Rs.2280

CP of both fans = 1000 + 1200

= Rs.2200

It is a case of Gain because SP is more than CP.

Gain = SP – CP

=2280 - 2200

= Rs80

$$Gain\% = \frac{Gain \times 100}{CP}$$

= (80 × 100) / 2200

= 3.64%

Question: 32

Vinod sold a watc

Solution:

Arun sold watch to Manoj at 5% loss at Rs.3990

$$\text{CP} = \frac{100}{100 - Loss\%} \times SP$$
$$= \frac{100}{100-5} \times 3990$$

= Rs.4200

So, Cost Price of watch for Arun is Rs.4200

Vinod sold watch to Arun 12% gain

$$CP = \frac{100}{100 + Gain\%} \times SP$$
$$= \frac{100}{100+12} \times 4200$$
$$= \frac{100}{112} \times 4200$$

= Rs.3750

So, Vinod paid Rs.3750 for a watch.

Question: 33

Ahmed buys a plot

Solution:

CP of plot = Rs.480000

SP of plot to gain 10%

$$\text{SP} = = \frac{100 + Gain\%}{100} \times CP$$

= ((100 + 10) /100) × 480000

= Rs.528000

CP for 2/5 area of plot = 480000 × 2/5

= Rs.192000

SP of 2/5 area of plot will be

SP = ((100 – Loss %)/100) × CP

= ((100 - 6) / 100) × 192000

= Rs.180480

Difference between both the Selling Prices

= 528000 – 180480

= Rs.347520

CP for 3/5 land = 480000 – 192000

= Rs.288000

SP for 3/5 land = Rs.347520

Gain = SP - CP

= 347520 – 288000

= Rs.59520

$$Gain\% = \frac{Gain \times 100}{CP}$$

= (59520 × 100) / 288000

= 20.66%

So, to gain 10% on whole remaining land should be sold at 20.66%.

Question: 34

A grocer bought s

Solution:

CP of sugar = Rs.4500

SP of sugar to gain 12% on whole

$$SP = \frac{100 + Gain\%}{100} \times CP$$

$$= \frac{100 + 12}{100} \times 4500$$

= Rs.5040

CP for 1/3 of sugar = 4500 × 1/3

= Rs.1500

SP of 1/3 of sugar will be

$$SP = = \frac{100 + Gain\%}{100} \times CP$$

$$= \frac{100 + 10}{100} \times 1500$$

= Rs.1650

Difference between both the Selling Prices

= 5040 – 1650

= Rs.3390

CP for remaining 2/3 sugar = 4500 – 1500

= Rs.3000

SP for 2/3 sugar = Rs.3390

Gain = SP - CP

= 3390 – 3000

= Rs.390

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{390 \times 100}{3000}$$

= 13%

So, to gain 12% on whole remaining sugar should be sold at 13%.

Exercise : 10B

Question: 1

The marked price

Solution:

Market Price = Rs.4650

Discount = 18%

Discount in Amount = (18% of Market Price)

$=\frac{18}{100}\times 4650$

= Rs.837

Selling Price = Market Price – Discount

= 4650 – 837

=Rs.3813

Question: 2

The price of a sw

Solution:

Market Price = Rs.960

Selling Price = Rs.816

Discount = Market Price – Selling Price

= 960 - 816

=Rs.144

Discount % = (Discount/Market Price) × 100

= (144/960) × 100

= 15%

Question: 3

Find the rate of

Solution:

Selling Price = Rs.1092

Discount = Rs.208

Market Price = Selling Price + Discount

= 1092 + 208

= Rs.1300

Discount % = (Discount/Market Price) × 100

= (208/1300) × 100

= 16%

Question: 4

After allowing a

Solution:

Discount =8%

Selling Price = Rs.216.20

Let y be the Market Price of Toy.

Market Price – Discount = Selling Price

$$y-\left(y\times\frac{8}{100}\right)=216.20$$

$$=\frac{100y-8y}{100}=216.20$$

$$=\frac{92y}{100}=216.20$$

$$y=\frac{216.20\times100}{92}$$

= Rs.235

Market Price of toy is Rs.235.

Question: 5

A tea set was bou

Solution:

Selling Price = Rs.528

Discount = 12%

Let y be the Market Price of Tea Set.

Market Price – Discount = Selling Price

$$y-\left(y\times\frac{12}{100}\right)=528$$

$$\frac{88y}{100}=528$$

$$y=\frac{528\times100}{88}$$

= Rs.600

So, Market Price of tea set is Rs.600.

Question: 6

A dealer marks hi

Solution:

Let × be the CP of the goods.

Market Price of the goods when goods is marked above 35% of CP

Market Price = × + (35x/100)

= 135x/100

Discount Offered = 20%

Discounted Amount = 20% of 135x/100

= 27x/100

Selling Price = Market Price – Discount

= (135x/100) – (27x/100)

=108x/100

=1.08x

Since SP is more than CP, it is a case of Gain.

Gain = SP – CP

= 1.08x– x

= 0.08x

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{0.08x}{x} \times 100$$

= 8%

Question: 7

A cellphone was m

Solution:

Let × be the CP of the cellphone.

Market Price of the goods when goods is marked above 40% of CP

Market Price = × + (40x/100)

= 140x/100

=1.4x

Discount Offered = 30%

Discounted Amount = 30% of 1.40x

= 0.42x

Selling Price = Market Price – Discount

= 1.4 × – 0.42x

=0.98x

Since CP is more than SP, it is a case of Loss.

Loss = CP – SP

= × – 0.98x

= 0.02x

$$Loss\% = \frac{Loss \times 100}{CP}$$

$$= \frac{0.02x}{x} \times 100$$

= 2%

Question: 8

A dealer purchase

Solution:

Cost Price = Rs.1080

Gain = 25%

$$\text{Selling Price} = \frac{100 + Gain\%}{100} \times CP$$

$$= \frac{100 + 25}{100} \times 1080$$

= Rs.1350

Discount = 25%

Let × be the market price.

Market Price – Discount = Selling Price

× – 25% of × = 1350

× – 25x/100 = 1350

75x/100 = 1350

X= (1350 × 100) / 75

= Rs.1800

So, Market Price of Fan is Rs.1800

Question: 9

A dealer bought a

Solution:

Cost Price = Rs.11515

Gain = 20%

Selling Price = $= \frac{100+Gain\%}{100} \times CP$

$= \frac{100+20}{100} \times 11515$

= Rs.13818

Discount = 16%

Let × be the market price.

Market Price – Discount = Selling Price

× – 16% of × = 13818

× – 16x/100 = 13818

84x/100 = 13818

X= (13818 × 100) / 84

= Rs.16450

So, Market Price of refrigerator is Rs.16450

Question: 10

A jeweller allows

Solution:

Cost Price = Rs.1190

Gain = 20%

Selling Price $= \frac{100+Gain\%}{100} \times CP$

$= \frac{100+20}{100} \times 1190$

= Rs.1428

Discount = 16%

Let × be the market price.

Market Price – Discount = Selling Price

× – 16% of × = 1428

× – 16x/100 = 1428

84x/100 = 1428

X= (1428 × 100) / 84

= Rs.1700

So, Market Price of ring is Rs.1700

Question: 11

After allowing a

Solution:

Let’s assume Cost Price of Product to be Rs.100.

Given he gains 17% on selling price would be

Selling Price = (100 + 17% of 100) = Rs.117

Discount = 10%

Let × be the marked price.

Market Price – Discount = Selling Price

x- (10% of x) = 117

× – x/10 = 117

9x/10 = 117

× = 130

Cost price is 100

Selling price is 117

Marked price is 130

So, Market Price is 30% above Cost Price.

Question: 12

How much per cent

Solution:

Let’s assume Cost Price of Product to be Rs.100.

Given he gains 8% on selling price would be

Selling Price = (100 + 8% of 100) = Rs.108

Discount = 10%

Let × be the marked price.

Market Price – Discount = Selling Price

x- (10% of x) = 108

× – x/10 = 108

9x/10 = 108

× = 120

Cost price is 100

Selling price is 108

Marked price is 120

So, Market Price is 20% above Cost Price.

Question: 13

The marked price

Solution:

Market Price = Rs.18500

First Discount = 20%

Second Discount = 5%

The formula for total discount in case of successive discounts:If the first discount is x% and 2nd discount is y% then,

Total Discount =

$$\left[(x+y)-\frac{xy}{100}\right]\%$$
$$\left[(20+5)-\frac{20\times 5}{100}\right]\%$$
$$\left(25-\frac{100}{100}\right)\%$$

= 24%

Discount = (24% of Rs.18500)

= Rs.4440

Selling Price = Market Price – Discount

= 18500 – 4440

= Rs.14060

Question: 14

Find the single d

Solution:

First Discount = 20%

Second Discount = 5%

The formula for total discount in case of successive discounts:If the first discount is x% and 2nd discount is y% then,

Total Discount=

$$\left[(x+y)-\frac{xy}{100}\right]\%$$
$$\left[(20+5)-\frac{20\times 5}{100}\right]\%$$
$$\left(25-\frac{100}{100}\right)\%$$

= 24%

Exercise : 10C

Question: 1

The list price of

Solution:

List Price = Rs14650

Sales Ta × = 6%

Sales Ta × Amount = 6% of Rs14650

=6% × 14650

=Rs879

Final Price = List Price + Sales Tax

= 14650 + 879

= Rs.15529

Question: 2

Reena bought the

Solution:

Cost of Tie = Rs.250

ST on Tie = 6%

ST Amount on Tie = 6% of Rs250

= 15

Final Cost of Tie = 250 + 15 = Rs.265

Cost of Medicine = Rs.625

ST on Medicine = 4%

ST Amount on Medicine = 4% of Rs.625

= Rs.25

Final Cost of Medicine = 625 + 25 = Rs.650

Cost of Cosmetic = Rs.430

ST on Cosmetic = 10%

ST Amount on Cosmetic = 10% of Rs.430

= Rs.43

Final Cost of Medicine = 430 + 43 = Rs.473

Cost of Clothes = Rs.1175

ST on Clothes = 8%

ST Amount on Medicine = 8% of Rs.1175

= Rs.94

Final Cost of Medicine = 1175 + 94 = Rs.1269

So, Total Amount to be paid by Reena = Rs.265 + Rs.650 + Rs.473 + Rs.1269

= Rs.2657

Question: 3

Tanvy bought a wa

Solution:

VAT = 10%

Selling Price = Rs.1980

Let × be the original price of watch.

VAT Amount = 10% of x

=x/10

× + x/10 = 1980

11x/10 = 1980

X= (1980 × 10) / 11

= Rs.1800

So, Original Price of Watch excluding VAT is Rs.1800.

Question: 4

Mohit bought a sh

Solution:

VAT = 7%

Selling Price = Rs.1337.50

Let × be the original price of watch.

VAT Amount = 7% of x

=7x/100

× + 7x/100 = 1337.50

107x/100 = 1337.50

X= (1337.50 × 100) / 107

= Rs.1250

So, Original Price of Shirt excluding VAT is Rs.1250.

Question: 5

Karuna bought 10

Solution:

VAT = 1%

Selling Price = Rs.15756

Let × be the original price of watch.

VAT Amount = 1% of x

=x/100

× + x/100 = 15756

101x/100 = 15756

X= (15756 × 100) / 101

= Rs.15600

So, Original Price of 10gm Gold excluding VAT is Rs.15600.

Question: 6

Mohini purchased

Solution:

VAT = 4%

Selling Price = Rs.37960

Let × be the original price of watch.

VAT Amount = 4% of x

=4x/100

× + 4x/100 = 37960

104x/100 = 37960

X= (37960 × 100) / 104

= Rs.36500

So, Original Price of Computer excluding VAT is Rs.36500.

Question: 7

Sajal purchased s

Solution:

VAT = 12%

Selling Price = Rs.20776

Let × be the original price of watch.

VAT Amount = 12% of x

=12x/100

× + 12x/100 = 20776

112x/100 = 20776

X= (20776 × 100) / 112

= Rs.18550

So, Original Price of parts of Car excluding VAT is Rs.18550.

Question: 8

The sale price of

Solution:

VAT = 8%

Selling Price = Rs.27000

Let × be the original price of watch.

VAT Amount = 8% of x

=8x/100

× + 8x/100 = 27000

108x/100 = 27000

X= (27000 × 100) / 108

= Rs.25000

So, Original Price of TV Set excluding VAT is Rs.25000.

Question: 9

Rohit purchased a

Solution:

Selling Price = Rs.882

Original Price = Rs.840

VAT Amount = 882- 840

= Rs.42

VAT % = (VAT Amount/Original Price) × 100

= (42/840) × 100

= 5%

So, Rate of VAT is 5%

Question: 10

Malti bought a VC

Solution:

Selling Price = Rs.19980

Original Price = Rs.18500

VAT Amount = 19980- 18500

= Rs.1480

VAT % = (VAT Amount/Original Price) × 100

= (1480/18500) × 100

= 8%

So, Rate of VAT is 8%

Question: 11

The value of a ca

Solution:

Selling Price = Rs.382500

Original Price = Rs.340000

VAT Amount = 382500- 340000

= Rs.42500

VAT % = (VAT Amount/Original Price) × 100

= (42500/340000) × 100

= 12.5%

So, Rate of VAT on Car is 12.5%

Exercise : 10D

Question: 1

Rajan buys a toy

Solution:

CP = Rs.75

SP = Rs.100

Gain = SP – CP

= 100 -75

= Rs.25

Gain Percent = $Gain\% = \frac{Gain \times 100}{CP}$

$= \frac{25 \times 100}{75}$

=33.33%

Question: 2

A bat is bought f

Solution:

CP = Rs.120

SP = Rs.105

Loss = CP – SP

= 120 -105

= Rs.15

$$Loss\% = \frac{Loss \times 100}{CP}$$
$$= \frac{15 \times 100}{120}$$

=12.5%

Question: 3

A bookseller sell

Solution:

SP = Rs.100

Gain = Rs.20

CP = SP – Gain

= 100 -20

= Rs.80

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{20 \times 100}{80}$$

=25%

Question: 4

On selling an art

Solution:

SP = Rs.48

Loss Percent = 20%

$$CP = \frac{100}{100 - Loss\%} \times SP$$
$$= \frac{100}{100 - 20} \times 48$$
$$= \frac{100}{80} \times 48$$

= Rs.60

$$SP = \frac{100 + Gain\%}{100} \times CP$$

$$= \frac{100 + 20}{100} \times 60$$

$= \frac{120}{100} \times 60$

= Rs.72

Question: 5

On selling an art

Solution:

Let the cost price be Rs.100

Gain = 10%

$SP = \frac{100 + Gain\%}{100} \times CP$

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

= Rs.110

Now, according to question make the selling price double

= 110 × 2

= Rs.220

Now, Gain will be

= 220 – 100

= Rs.120

$Gain\% = \frac{Gain \times 100}{CP}$

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

= 120%

Question: 6

Bananas are bough

Solution:

CP for 3 Bananas = Rs.2

CP for 1 Banana = Rs.2/3

SP for 2 Bananas = Rs.3

SP for 1 Banana = Rs.3/2

Gain = SP – CP

= 3/2 – 2/3

=5/6

$Gain\% = \frac{Gain \times 100}{CP}$

$= \frac{\frac{5}{6} \times 100}{\frac{2}{3}}$

= 5/4 × 100

= 125%

Question: 7

If the selling pr

Solution:

Let × be the CP of Pen

SP of 1 pen = x/10

CP of 1 Pen = x/12

Gain = SP –CP

= x/10 – x/12

=x/60

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{\frac{x}{60} \times 100}{\frac{x}{12}}$$

= 20%

Question: 8

On selling 100 pe

Solution:

Let × be the CP of pencil

SP of 100 pencils = 100x

Gain of 20 Pencils = 20x

CP = SP - Gain

= 100 × – 20x

= 80x

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{20x \times 100}{80x}$$

= 25%

Question: 9

Ravi buys some to

Solution:

Cost Price of 1 toffee=Rs.1/5

Selling Price of 1 toffee=Rs.1/2

Gain = SP – CP

= 1/2 - 1/5

= 3/10

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{\frac{3}{10} \times 100}{\frac{1}{5}}$$

= 150%

Question: 10

Oranges are bough

Solution:

Cost Price of 1 Orange =Rs.10/5 = Rs.2

Selling Price of 1 Orange =Rs.15/6 = Rs.2.5

Gain = SP – CP

= 2.5 - 2

= 0.5

Gain Percent = $Gain\% = \frac{Gain \times 100}{CP}$

= (0.5 × 100) / 2

= 25%

Question: 11

By selling a radi

Solution:

SP = Rs.950

Loss % = 5

$$CP = \frac{100}{100 - Loss\%} \times SP$$

$$= \frac{100}{100 - 5} \times 950$$

= Rs.1000

New SP will be Rs.1040

Gain = SP - CP

= 1040 – 1000

= Rs.40

$$Gain\% = \frac{Gain \times 100}{CP}$$

= (40 × 100) / 1000

= 4%

Question: 12

The selling price

Solution:

Let × be the CP

SP = 6x/5

Gain = SP –CP

= 6x/5 – x

=x/5

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{\frac{x}{5} \times 100}{x}$$

= 20%

Question: 13

On selling a chai

Solution:

SP = Rs.720

Loss % = 25

$$CP = \frac{100}{100 - Loss\%} \times SP$$

$$= \frac{100}{100 - 25} \times 720$$

= Rs.960

$$SP = \frac{100 + Gain\%}{100} \times CP$$

$$= \frac{100 + 25}{100} \times 960$$

= Rs.1200

Question: 14

The ratio of cost

Solution:

Let × be the common multiple

CP = 20x

SP = 21x

Gain = SP – CP

= 21 × – 20x

= x

Gain Percent = $Gain\% = \frac{Gain \times 100}{CP}$

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

= 5%

Question: 15

A man sold two ch

Solution:

SP of first chair = Rs.500

CP of first chair

$$= \frac{100}{100 + Gain\%} \times SP$$

$$= \frac{100}{100 + 20} \times 500$$

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

= Rs.416.66

SP of second chair = Rs.500

SP of second chair

$$= \frac{100}{100 - Loss\%} \times SP$$

$$= \frac{100}{100 - 12} \times 500$$

= Rs.568.18

CP of both chairs = 500 + 500

= Rs.1000

SP of both chairs = 568.18 + 416.66

= Rs.984.84

It is a case of Loss because CP is more than SP.

Loss = CP – SP

=1000 – 984.84

= Rs15.16

$$Loss\% = \frac{Loss \times 100}{CP}$$

$$= \frac{15.16 \times 100}{1000}$$

= 1.51%

Question: 16

The profit earned

Solution:

Let the CP be x.

When Profit is earned CP = 625 – x

When Loss is incurred CP = × – 435

According to question,

625 – × = x- 435

2 × = 625 + 435

2 × = 1060

× = Rs.530

So, Cost Price is Rs.530.

Question: 17

A man buys an art

Solution:

CP = Rs.150

Overhead Expense = 10% of Rs.150

= Rs.15

So, total cost of an article = 150 + 15

= Rs.165

$$SP = \frac{100 + Gain\%}{100} \times CP$$
$$= \frac{100 + 20}{100} \times 165$$

= Rs.198

Question: 18

If an article is

Solution:

Let the CP be x.

When Profit is earned CP = 1.05x

When Loss is incurred CP = 0.95x

According to question,

1.05 × – 0.95 × =5

0.10 × =5

X= 50

So, Cost Price of an article is Rs.50.

Question: 19

A dealer lists hi

Solution:

Let CP will be Rs.100

Marked Price = Rs.120

10% Discount on Marked Price = 10% of Rs.120

= Rs.12

So, SP = 120 -12

= Rs.108

Gain = SP – CP

= 108 – 100

= Rs.8

$$Gain\% = \frac{Gain \times 100}{CP}$$

= (8 × 100) / 100

= 8%

Question: 20

The marked price

Solution:

When two similar items are sold at same price, one at a gain and other at a loss of same percent. Then always a loss will be occurred.

Loss % = (Common Loss and Gain Percent / 10)^2

= (10/10)^2

= (1)^2

= 1

So, Loss will be 1%.

Question: 21

The price of watc

Solution:

VAT = 10%

Selling Price = Rs.825

Let × be the base price.

Vat Amount = 10% of x

= x/10

Base Price + VAT = Selling Price

× + x/10 = 825

11x/10 = 825

× = (825 × 10) / 11

= Rs.750

Exercise : CCE TEST PAPER-10

Question: 1

By selling a flow

Solution:

$$CP = \frac{100}{100 + Gain\%} \times SP$$
$$= \frac{100}{100 + 15} \times 322$$
$$= \frac{100}{115} \times 322$$

= Rs.280

To gain 20%, SP should be

$$SP = \frac{100 + Gain\%}{100} \times CP$$
$$= \frac{100 + 20}{100} \times 280$$
$$= \frac{120}{100} \times 280$$

=Rs.336

Question: 2

If the cost price

Solution:

Let × be the CP of Pen

SP of 1 pen = x/16

CP of 1 Pen = x/12

Loss = CP – SP

= x/12 – x/16

= x/48

$$Loss\% = \frac{Loss \times 100}{CP}$$

$$= \frac{\frac{x}{48} \times 100}{\frac{x}{12}}$$

= 25%

Question: 3

A dealer gets Rs.

Solution:

Let × be the Cost Price of the chair.

SP of chair when sold at 12% gain = 112x/100

SP of chair when sold at 8% gain = 108x/100

Now, according to questions,

112x/100 – 30 = 108x/100

4x/100 = 30

× = (30 × 100) / 25

= Rs.750

Question: 4

A trader marks hi

Solution:

Let CP will be Rs.100

Marked Price = Rs.130

10% Discount on Marked Price = 10% of Rs.130

= Rs.13

So, SP = 130 -13

= Rs.117

Gain = SP – CP

= 117 – 100

= Rs.17

$$Gain\% = \frac{Gain \times 100}{CP}$$

= (17 × 100) / 100

= 17%

Question: 5

Find the single d

Solution:

Let the CP of product is Rs.100

20% discount on CP = Rs.20

Then, Price would be = 100-20

=Rs.80

Now, 10% discount on current price = 10% of Rs.80

= Rs.8

Now, final Selling Price will be = Rs.80 – Rs.8

= Rs.72

Discount Percent =

$$\frac{CP-SP}{100}\times CP$$

$$\frac{100-72}{100}\times 100$$

= 28%

So, successive discount of 20% and 10% is 28%

Question: 6

Rajan bought a wa

Solution:

VAT = 10%

Selling Price = Rs.1870

Let × be the base price.

Vat Amount = 10% of x

= x/10

Base Price + VAT = Selling Price

× + x/10 = 1870

11x/10 = 1870

× = (1870 × 10) / 11

= Rs.1700

So, Cost Price of watch is Rs.1700

Question: 7

On selling 100 pe

Solution:

Let × be the CP of pen

SP of 100 pens = 100x

Gain of 20 Pens = 20x

CP = SP - Gain

= 100 × – 20x

= 80x

$$Gain\% = \frac{Gain\times 100}{CP}$$

$$=\frac{20x\times 100}{80x}$$

= 25%

Question: 8

A man sells a bat

Solution:

SP = Rs.100

Gain = Rs.20

CP = SP – Gain

= 100 – 20

= Rs.80

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{20 \times 100}{80}$$

= 25%

Question: 9

The selling price

Solution:

Let × be the CP

SP = 6x/5

Gain = SP –CP

= 6x/5 – x

=x/5

$$Gain\% = \frac{Gain \times 100}{CP}$$

$$= \frac{\frac{x}{5} \times 100}{x}$$

= 20%

Question: 10

On selling a chai

Solution:

SP = Rs.680

Loss % = 15

$$CP = \frac{100}{100 - Loss\%} \times SP$$
$$= \frac{100}{100 - 15} \times 680$$

= Rs.800

$$SP = \frac{100 + Gain\%}{100} \times CP$$
$$= \frac{100 + 15}{100} \times 860$$

= Rs.920

Question: 11

A dealer lists hi

Solution:

Let CP will be Rs.100

Marked Price = Rs.120

10% Discount on Marked Price = 10% of Rs.120

= Rs.12

So, SP = 120 -12

= Rs.108

Gain = SP – CP

= 108 – 100

= Rs.8

$$Gain\% = \frac{Gain \times 100}{CP}$$

= (8 × 100) / 100

= 8%

Question: 12

The price of a wa

Solution:

VAT = 8%

Selling Price = Rs.810

Let × be the base price.

Vat Amount = 8% of x

= 8x/100

Base Price + VAT = Selling Price

× + 8x/100 = 810

108x/100 = 810

× = (810 × 100) / 108

= Rs.750

So, Cost Price of watch is Rs.750

Question: 13

Fill in the blank

Solution:

(i) Marked

Selling Price = Marked Price - Discount

(ii) Cost price

If seller sells any item greater than Cost Price, it is said to have a Gain.

Gain = SP - CP

If seller sells any item less than Cost Price, it is said to have a Loss.

Loss = CP – SP

(iii) Discount

SP is the amount that we pay for an article when purchased.

Marked Price is the price that is without any discount.

Discount is amount which we get as a rebate for purchasing the article.

(iv) Selling price

VAT is always charged on the Selling Price of an article and not on the MRP.

Question: 14

Write ‘T&#

Solution:

(i) False

SP = ((100 – Loss %) / 100) × CP

(ii) True

(iii) False

If seller sells any item greater than Cost Price, it is said to have a Gain.

Gain = SP - CP

(iv) T

Discount = Marked Price – Selling Price