Assignment 2

Q1 Article sold at a loss of 25% & Selling price is ₹ 450 find CP

⇒ $x \xrightarrow{-25} 450$

$\frac{75}{100} = \frac{450}{x}$ ∴ $\frac{3}{4} = \frac{450}{x}$

$3x = 1800$

$x = 1800/3 = 600$

c) 600

Q2 A person brought an item for ₹1200 and sold it for ₹ 1440 what is the profit persentage

⇒ 1440
-1200
0240

$\frac{1200}{100} = \frac{240}{x}$

$12x = 240$

$x = 240/12 = 20\%$

c) 20%

Q3 If the selling price of an item is ₹ 960 and

⇒ 960
-800
160

$\frac{800}{100} = \frac{160}{x}$

$8x = 160$

$x = 20\%$

b) 20%

Q4 A shopker sells a fan at ₹ 1200 with a loss of 20% Find the cost price

⇒ $x \xrightarrow{-20\%} 1200$

$\frac{480}{100} = \frac{1200}{x}$ ∴ $4x = 6000$

$x = 1600$

b) 1400

Q5 CP → ₹400 & sold for ₹480 find Profit.

⇒ 480
-400
80

$\frac{400}{100} = \frac{80}{x}$

$4x = 80$

$x = 20\%$

b) 20%

Q6 A trader gives two successive discounts of 20% and 10% find the net discount percentage

$\Rightarrow$ $100 \xrightarrow{-20} 80 \xrightarrow{-10} 72$

$$\begin{array}{r} 100 \\ -\ 72 \\ \hline 28\% \end{array}$$

a) 28%

Q7 Sold for ₹ 800 after given a 20% discount find material price

$\Rightarrow$ $x \xrightarrow{-20\%} 600$ $\quad \frac{80}{100} = \frac{800}{x}$ $\quad 4x = 4000$

$x = 1000$

Q8 A man sold a shirt for ₹ 800 after given a 20% discount Find the marked price

$\Rightarrow$ $C.P \xrightarrow{+25\%} 1800$ $\quad \frac{125}{100} = \frac{1800}{x}$

$5x = 7200$ $\quad x = 1440$

c) ₹ 1400

Q9 A merchant by 10 pens for ₹ 150 and sells them for 200 what is his profit percentage?

$\Rightarrow$ $1500 \xrightarrow{-10\%}$

$$\begin{array}{r} 1500 \\ 150 \\ \hline 1350 \end{array}$$

b) 1350

Q10 A merchent buys 10 pens for 150 and sells them for ₹200 what is profit percentage?

$=$ Price of 1 pen $= \frac{150}{10} = 15$ $\quad \frac{3\ 15}{20\ 100} = \frac{20}{x}$

$3x = 400$ $\quad x = \frac{400}{3} = 133.33$

c) 33.33%

Q11 Gives a 15% discount & still makes a profit 20% what is markup percentage

$\Rightarrow$ $100 \xrightarrow{-15\%} 85$ $\qquad \frac{120}{100} = \frac{85}{x}$

$x \xrightarrow{+20\%} 85$

$6x = 425$

$x = 70.83 = CP$

$100 - 70.83 = 29.17 \approx 30 \quad \therefore \frac{30}{70} \times 100$

$= 42.85\%$

Q12) A table is sold for ₹ 2250 at a 10% profit what is the cost price?

$\Rightarrow$ $x \xrightarrow{+10\%} 2250 \qquad \frac{110}{100} = \frac{2250}{x}$

$11x = 22500$

$x = 2045$

Q13 A refregirator ~~so~~ is sold for 16000 at a loss of 10%. Find the cost price

$\Rightarrow$ $800 \xrightarrow{25\%} 10 + 10 + 5 \longrightarrow$

80
$+ 80$
$+ 140$
200

$800 + 200$

$= 1000$

b) 1000

Q14 An ~~refregirator~~ article is marked 50% above the cost price and the sold at a discound of 20% what is the profit percentage?

$\Rightarrow$ $\frac{50}{100} \quad \frac{15000}{x} \quad$ ~~$50x = 150000$~~ $\quad 100 \xrightarrow{+50\%} \underset{m.p}{150} \xrightarrow{-20\%} 120$

~~$x = 10,666$~~

$\therefore 20\%$

a) 20%

Q15 A deler makes a Profit of 12% after allowing a 5% discound. find the marked price of an article whose cos price is ₹400.

$100 \xrightarrow{+50\%} 150 \xrightarrow{-20\%} 120 \qquad \therefore 20\%$

a) 20%

Q16 A dealer makes a profit of 12% after following a 5% discount find the ~~method~~ marked price of an article whose cost price is ₹ 400

⇒ m.p $\xrightarrow{-5\%}$ 448

$\frac{95}{100} = \frac{448}{x}$

$19x = 8960$

$x = 471.57$

Q17 A book is brought for ₹ 480 and sold for ₹ 576 what is the profit percentage

⇒ 576
− 480
096

$\frac{96}{480} \times 100$

$= 20\%$

c) 20%

Q18 Profit of ₹ 50 is made whose cost price is ₹ 50 What is the profit percentage

⇒ C.P → 500
P → +50
SP → 550

$\frac{50}{500} \times 100$

$= 10\%$

c) 10%

~~Q19 If a profit of ₹ 250 is made on an article whose~~

Q19 A shopkeper sells a cycle at a 15% profit and the selling price is ₹ 2300 find the cost price

⇒ S.P → ~~800~~ 2300 (+15%)

$x = CP$

$\frac{115}{100} = \frac{2300}{x}$

$23x = 46000$

$x = 2000$

b) 2000

Q20 The cost price of an article is ₹ 750 and it is sold at ₹ 900 what is the gain percentage?

SP → 900
CP → 750
P → 150

$\frac{150}{750} \times 100 = 20\%$

c) 20%

Q21 A man sells an item at 20% loss. If the selling price is 640 find the cost price.

$\Rightarrow$ $100 \xrightarrow{-20\%} 80$ $\quad x \xrightarrow{-20\%} 640$

$\frac{80}{100} = \frac{640}{x}$ $\quad 4x = 3200$

$x = 800$

c) ₹800

Q22 A trader sells a mobail phone for ₹ 9600 at a profit of 20% Find the cost price

$\Rightarrow$ $x \xrightarrow{+20\%} 9600$

$6x = 48,000$ $\quad \frac{120}{100} = \frac{9600}{x}$

$x = 8000$

b) ₹8000

Q23 A shopkeper sells an item for ₹500 at a 20% profit what the cost price?

$\Rightarrow$ $x \xrightarrow{+20\%} 500$ $\quad \frac{120}{100} = \frac{500}{x}$

CP $\quad$ S.P

$6x = 2500$ $\quad x = 416.67$

Q24 A man buys two articles for ₹1500 each He sells one a 20% profit and the other at a 10% loss find his net profit / loss

$1500 \xrightarrow{+20\%} 1800$ $\quad$ Calculate for single book

$1500 \xrightarrow{-10\%} 1350$

3000 $\quad$ 3150

$\frac{150}{3000} \times 100 = 5\%$ profit

b) 5% profit

Q25 A trader sells an article at ₹1250 with a loss of 12% find the cost price

$x \xrightarrow{-12\%} 1250$ $\quad \frac{88}{100} = \frac{1250}{x}$

$22x = 31,250$ $\quad x = 1420$ $\quad$ b) 1400

Q26 Find the profit percent earned after selling an article at a doubled rate for half quality.

⇒ 100 ⟶ 200 is for half quantity

$\therefore \frac{1200}{400}$

400 − 100 = 300 % b) 300 %

Q27 No is multiplid by 20 % of itself, the sum is the doubled. If the final value is 490 find the number

$100 \xrightarrow{20\%} 20$ ∴ 100 + 20 = 120
120
240

Now $\frac{240}{100} = \frac{490}{x}$

$24x = 4900$

$x = 204.16$

$x \times 0.2x = 0.2x^2 \times 2(\text{double}) = 0.4x^2 = 490$

$x^2 = \frac{490}{0.4} = 1225$ $x = 35$

Q28 An article is sold at 20 % less than its cost price if the selling cost ~~of~~ is 50 rupess and the selling cost is 5% of the selling price find the loss (Selling cost here is the expense occured to sell the article levied on the seller.

⇒ C.p − 20 % sp

$1000 \xrightarrow{-20\%} 800$

1000
− 800
200 loss

$S = \frac{50}{C.p} \times 100$

$CP = \frac{50}{5} \times 100$

Cp = 1000

b) 200 rupess

Q29 If the seller sells half of his goods at 20% loss and the rest of his goods at 50% profit find the profit percentage on the entire transaction

100

50 50

-20% +50%

40 75

∴ 75
+40
115

∴ 15% profit

b) 15% profit

Q30 The expense of selling an article worth rupess 6000 is 50 rupees if the selling expenses is 10% more than the loss, find the loss percentage.

⇒ loss $\xrightarrow{+10\%}$ 50 ∴ loss ≈ 45

∴ $\frac{45}{6000} \times 100 = 0.75\%$

a) 7.5%

Q31 The profit on selling 1 article is equal to the cost price of 2 find the profit percentage.

⇒ Profit on 1 article = cp of 2 article

Suppose 100 = 50 + 50

∴ cp of 1 article = 50 & profit is 100

∴ $\frac{100}{50} \times 100 = 200\%$

Q32 The initial price of an articles is decrease by 20% but the selling price remains constant. If the initial profit was 500 rupess find the new profit it is known the initial profit percent was 20% of cost price

⇒ I.P $\xrightarrow{-20\%}$ $20 = \frac{500}{CP} \times 100$

2500 $\xrightarrow{-20\%}$ 2500 $CP = \frac{500}{20} \times 100$
− 500
2000 CP = 2500

Profit was 500 ∴ 2500 + 500 = 3000

& now SP = 3000 & CP = 2000

∴ Profit = 1000

Q33 The price of a pair of slippers is decreased by 10% and the selling price is constant. If the initial profit Percentage was Equal to 25% find the New profit Percentage.

⇒ $p \xrightarrow{-10\%}$ S.P const

Suppose $\underset{C.P}{100} \xrightarrow{+25\%} \underset{SP}{125}$

CP is 100 and decreased by 10%

∴ CP = 90 & SP remains same

∴ Profit = SP − C.P

= 125 − 90

= 35

Profit % $= \frac{35}{90} \times 100 = 38.88\%$ b) 38.88%

34) The cost price of an article is doubled, and the Selling price is made half. If the initial profit percentage was 500% find the profit percentage Now

⇒ 500% $\frac{\cancel{500}^{5}}{\cancel{100}} \times 100$

∴ CP = 100 & Profit = 500

∴ SP = 600 .... in intial condition

Now C.P = 2×100 = 200

S.P = 1/2 × 600 = 300

Profit = 300 − 200 = 100

Profit % $= \frac{100}{200} \times 100 = 50\%$ b) 50%

35) A shopkeper increases the price of Sugar by 25% By how much a family should decrease their consumtion to maintain the regular price?

⇒ $100 \xrightarrow{+25\%} 125 \longrightarrow 100$

$\frac{25}{125} \times 100 = \frac{1}{5} \times 100$

= 20%

c) 20%

36 The profit on selling 15 articles is equal to the cost price of 2 articles Find the profit percentage

⇒ Profit on selling 15 articles = cost of 2 articles

100 = 50 + 50

Profit for the artic = 100/15 = 6.66

cost of 1 article = 50

Profit % = $\frac{6.66}{50} \times 100 = 13.33\%$

C) 13.33 %

37) 40 % of number a is 50 % of a number b find the value of a:b.

⇒ 40% A = 50 % B

∴ $\frac{40}{100} A = \frac{50}{100} B$

$\frac{2}{5} A = \frac{1}{2} B$

$A/B = 1/2 \times 5/2$

$A/B = 5/4$ ∴ A : B = 5 : 4

38) The marked price of an article is 5 times the discount

⇒ MP = 5 × discount.

SP = MP − discount ..... (discount = d)

= 5d − d

SP = 4d

∴ 4 times the discount.

Q39 Solve for x ; x = 20% of 12% of 120% of 6250

⇒ 20%

6250 + 1250 = 7500
100% 20%

12% 7500
= 900

20% 900 = 180

∴ d) 180

40 A shopkeeper purcheased an article for 500 rupee At what price should he mark the article to allow a discount of 35% and still earn 100% profit.

⇒ 500 $\xrightarrow{100\%}$ 1000 $\frac{65}{100} = \frac{1000}{x}$
CP SP

65x = 10000
x = 1538

a) 1539 rupees

41 If 33.33% of the number is 20 more than 16.66% of the number, find 120% of the number.

⇒ A = 25% + B
100 = 125 $\frac{25}{125} \times 100 = 20\%$

100 → 125
A B

d) 125

~~47 A number if doubled, then triple and this process is repeated twice. what is the percentage change?~~

42 Find the number if, 20% of a number is 20 more than 20 of another number 20.

⇒ ~~disc~~ A = 25% + B
100 = 125 $\frac{25}{125} \times 100 = 20\%$

Q42 If the discount is twice the cost price and the marked price is 10000, find the selling price. No profit or loss was made.

⇒ disc = 2 × C.P

M.P = 10000

No Profit No loss → C.P = S.P

disc = 2 × C.P

= 2 × S.P

MP = disc + S.P

= 2 × S.P + SP

MP = 3SP or 3CP

10000 = 3 S.P

SP = 10000/3

b) 3333.33 rupees.

43 The cost price of an article is 30% less than the selling price. The discount is 40% of the selling price. If the marked price is 12600 rupees, find the cost price.

⇒ SP $\xrightarrow{-30\%}$ C.P

disc is 40% on S.P

MP = 12,600

MP = disc + S.P

44) If 33.33% of a number is 20 more than 16.66% of the number, find 120% of the numbe

⇒ ~~S.P~~ $\xrightarrow{-30\%}$ 33.33% of n = 20 + 16.66 of n

$\frac{33.33}{100} n = \frac{16.66}{100} n + 20$

$\frac{1}{3} n = \frac{1}{6} n + 20$

$\frac{2 \times 1}{2 \times 3} n = \frac{1}{6} n + 20$

$\frac{2}{6} n = \frac{1}{6} n + 20$

$\frac{2}{6} n - \frac{1}{6} n = 20$

$1/6\, n = 20$

$n = 120$

Now 120% of n

100 + 20 + 10

120 + 12 + 12

144

c) 144

45 Find the no if 20% of a number is 20 more they 20% another no 20

⇒ 20% of $n = 20 + 20\%$ of x

$\frac{120}{100} n = 20 + \frac{20}{100} \times 20$ --- (x be 20)

$\frac{1}{5} n = 20 + \frac{1}{5} \times 20$

$1/5\, n = 20 + 4$

$1/5\, n = 24$

$n = 120$ d7125

46 A number if doubled, then tripled and this process is repeated twice what is percentage change?

⇒ Suppose $100 \xrightarrow{2x} 200 \xrightarrow{3x} 600$ ---- ①

$600 \xrightarrow{2x} 1200 \xrightarrow{3x} 3600$ ---- ②

$\therefore 3600 - 100 = 3500$

$\therefore 3500$

a) 3500 %

47 By how much should 234 be reduced to make it 65% of itself?

⇒ $234 \xrightarrow{35\%} x$

$100 - 35 = 65$

Now

$35 = 10 + 10$

$\therefore 23.4$

23.4

23.4

11.7

81.9

$\therefore 81.9$

b) 81.9

48 What is 90% of 900% of 9000% of 9?

⇒ $90\% = \frac{90}{100}$ $900\% = \frac{900}{100} = 9$, $9000\% = \frac{9000}{100} = 9$

1) 9000% of 9 → $90 \times 9 = 810$

2) 900% of 810 → $9 \times 810 = 7290$

3) 90% of 7290 → 7290

729

6561

49 Out of 25 Employee of a compony 13 are set of and the salaries of the employee is increased by 24% find the total increase of decrease in company's expenditure.

⇒ Cond^n ①

25 emp and suppose salary is 100

$25 \times 100 = 2500$

Cond^n ②

from 25 emp 13 left

$25 - 13 = 12$

12 emp are now in componey & their salary is increased by

$\therefore 12 \times 124 = 1488$

Now $2500 - 1488 = 1012$

By ₹ 1012 compony expenditure reduced

$\therefore \frac{1012}{2500} \times 100 = 40.48\%$

50 Zayn brought ticket to concert for Rs 3500 He wants to sell them at a discount of 15% what is the discount is RS?

⇒ Brough for RS 3500

C.P = 3500

d = 15%

$3500 \xrightarrow{-15\%} 525$

C) 525