(1)

→ $\frac{200 \times 25}{100} = 2 \times 25 = \underline{50}$

| option b: 50 |

(2)

→ $\frac{40}{100} x = 80$

$x = \frac{80 \times 100}{40} = 2 \times 100 = \underline{200}$

| option c: 200 |

(3)

→ $\frac{75}{100} x = 150$

$x = \frac{150 \times 100}{75} = 2 \times 100 = \underline{200}$

| option b: 200 |

(4)

→ $\frac{15}{100} x = 120$

$x = \frac{120 \times 100}{15} = 8 \times 100 = 800$

$\frac{15}{100} 120 = \frac{15 \times 12}{10} = \frac{15 \times 6}{5} = \frac{90}{5}$

$= \underline{18}$

| option c: 18 |

(5) $\frac{30}{100} x = 90$ (2)

$x = \frac{90}{30} \times 100$

$x = 300$

option c : 300

(6)

→ price increase from 200 to 250

$\left(\frac{250 - 200}{200}\right) \times 100$

$= \frac{50}{200} \times 100$

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

option b : 25%

(7)

→ salary increases from 40000 to 50000

$= \frac{50000 - 40000}{40000} \times 100$

$= \frac{10000}{40000} \times 100$

$$\frac{1}{4} \times 100 = 25\%$$

option b = 25%

(8)

→ population decrease 10000 to 8000

~~10000 - 8000~~

$$= \frac{8000 - 10000}{8000} \times 100$$

$$= -\frac{2000}{8000} \times 100 = \frac{1}{4} \times 100$$

$$= -25\%$$

option d: -25%

negative sign depicts decrease.

(9)

→ pop price of book drops to 500 to 400

$$= \frac{400 - 500}{500} \times 100$$

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

$$= \frac{100}{5} = 20\%$$

option a: 20%

(10)

(4)

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

$$\frac{600 - 450}{600} \times 100$$

$$= \frac{150}{600} \times 100 = \frac{150}{6} = 25\%$$

option c: 25%

(11)

$$\rightarrow \frac{30}{100} \times 400 = 30 \times 4 = 120$$

OR

$$\frac{40}{100} \times 300 = 40 \times 3 = 120.$$

option c = both are same

(12)

$$60\%\ x = 8000$$

$$x - 60\%.x = 8000$$

$$x - \frac{60}{100} x = 8000$$

(5)

$$\left(1 - \frac{60}{100}\right)x = 8000$$

$$\left(\frac{100 - 60}{100}\right)x = 8000$$

$$\frac{40}{100}x = 8000$$

$$x = \frac{8000 \times 40}{100}$$

$$x = 80 \times 40$$

$$x = 3200$$

$$= \frac{8000 \times 100}{40}$$

$$= 20000$$

option c: 20000

(13)

lets assume B = 100

A = B + 20% of B

= 100 + 20

A = 120

% decrease = $\left(\frac{120 - 100}{120}\right) \times 100$

$= \frac{20}{120} \times 100$

$= 16.67\%$

option b: 16.67

(14)

→ Lets consider

$P = 100 \quad C = 100 \quad E = 10000$

$P = 125 \quad C = x \quad E = 10000$

$125x = 10000$

$x = \frac{10000}{125}$

$x = 80kg.$

$100 - 80 = 20kg$

% decrease : $\left(\frac{20}{100}\right) \times 100 = 20\%$

| option a : 20%.

(15)

→ let's assume B income = 1000

$A = B + 40\%$ of B

$A = 1000 + 400 = 1400$

% decrease → $\left(\frac{1400 - 1000}{1400}\right) \times 100$

$= 33.33\%$

$= 28.57\%$

| option a = 28.57%

(16) 100%

120% → 20% increse

108% → 20% decrease.

so answer | 8% increase |

(17) 100%.

Increased by 30% = 100 + 30 = 130%

Now, 130% is decreased by 20% = $130 \times \frac{20}{100}$

= 104%

| net change is 4% increase |

(18) population increase by 25%

the decrease by 20%

initial be 100%

Increase = 125% (100+25)

decrease = $(125)\left(\frac{20}{100}\right)$ = 100%

% = $\left(\frac{100-100}{100}\right) \times 100$ = 0%

| option 4 |

(19). price increase by 40%.
& then decrease by 30%.

initial = 100
Increase = 140 % (100% + 40%)

decrease = ~~140 − (30 × 25 / 100)~~)

= 140 − 30% · 140

= 140 − 42 = 98.

$\left(\frac{98-100}{100}\right) \times 100 = -2\%$

2% decrease

(20) First inc. 20%.
then dec 10%.

original ~~price~~ salary = 100

increased salary = 120

then decreased salary = $120 - \left(120 \times \frac{10}{100}\right)$

= 120 − 12

= 108

~~126~~ $\left(\frac{108-100}{100}\right) \times 100$

= 8% increase.

(21) sold at profit 25%

SP what % of CP.

$SP = CP + (25\% \text{ of } CP)$

$= 100 + \left(\frac{25}{100} \times 100\right) = 125\%$

option b

(22)

10% discount

$SP = MP - (10\% \text{ of } MP)$

$SP = 500 - \left(\frac{10}{100} \times 500\right)$

$SP = 450$

8% profit on the CP.

$SP = CP + (8\% \text{ of } CP)$

$SP = CP * \left(1 + \frac{8}{100}\right)$

$SP = CP \times 1.08$

$450 = CP \times 1.08$

$CP = \frac{450}{1.08} = 416.67$

$\cong 420.$

(23) CP = 100

profit = 20

SP = 120

profit % on SP

$= \frac{\text{profit}}{SP} \times 100 = \frac{20}{100} \times 100$

$= 16.67\%$

(option A)

(24) $\frac{1200 - 960}{1200} \times 100 = \frac{240}{1200} \times 100$

$= 20\%$ (option B)

(25) Brought at = 500

sold at = 650

$\left(\frac{650 - 500}{500}\right) \times 100 = \frac{150}{500} \times 100$

$= \frac{150}{5} = 30\%$

option C

(26)

→ B's income = 100

A's income = 120

% decrease = $\left(\frac{120-100}{120}\right) \times 100$

$= \frac{20}{100} \times 100 = 16.67\%$

option a

(27) $\frac{B}{G} = \frac{3}{2}$

% of boys out of total.

$= \frac{3}{5} \times 100\%$

$= 60\%$

(28) Increase in pop. = 250000 − 200000

$= \frac{50000}{200000} \times 100$

$= 25\%$

(29) Total votes = x

65% of x won by candidate

$$\left(\frac{65}{100}x\right) - \left(\frac{35}{100}\right)x = 3000 \quad (12)$$

$$\frac{30}{100}x = 3000$$

$$x = \frac{3000 \times 100}{30}$$

$$x = 10,000$$

Answer is 10000, option could be 8000.

(30) $P = 100$ After reduction of 30% $= 70$

increase required $= 100 - 70 = 30$

$$\% \text{ increase} = \frac{30}{70} \times 100$$

$$= 42.85\%$$

(31) original no. $= 100$

50% inc. $= 150$

50% dec. $= 75$

net change $= 100 - 75 = 25$

% decrease $= 25\%$

(32) $B = 100$

$A = 100 + 20 = 120$

$$\% = \frac{120-100}{1200} \times 100$$

$$= \frac{20}{120} \times 100 = \boxed{16.67\%}$$

(33)

→ 30% of $x = 90$

$$\frac{30}{100} x = 90$$

$$x = \frac{90}{30} \times 100$$

$$x = 300$$

60% of $x = ?$

60% of 300

$$= \frac{60}{100} \times 300$$

$$= 60 \times 3$$

$$= \boxed{180}$$

(34) total income : x

spends 75% of income

saving 25% of income.

$$\frac{25}{100} x = 5000$$

$$x = \frac{5000}{25} \times 100$$

$$\boxed{x = 20000}$$

34 Initial price = 100

consumption = 100 L

20% increase.

new price = 120%.

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

= 83.33 liters.

Reduce consumption

100 − 83.33 = 16.67%

35 original price = 100

After 20% increase = 120

After 10% decrease = 120 − 12

= 108

overall change = 108 − 100 =

+8% increase.

(37)

CP = 100

MP = 100 + 25 = 125

Selling price after 20% discount

SP = 125 − (20% of 125)

= 125 − 25

= 100

Profit / Loss = SP − CP = 100 − 100 = 0

0 %

(38) CP = 500

sold at loss at = 20%

loss = 20% of 500 = 100

SP = 500 − 100 = 400

(39) salary increased by 10% & then decreased by 10% what is final percentage change.

(18)

O.S. = 100

10% increase = 100 + 10 = 110

10% decrease on 110 = is 99

net change 99 − 100 = −1

% change = −1%

1% decrese.

(40) 40% marks needs to be passed.

gets 200 marks & fail by 20 marks.

Total marks.

passing marks = 200 + 20

Total marks = x

$$\frac{40}{100} x = 220$$

$$\frac{220 \times 100}{40} = x$$

$$\frac{22 \times 100}{4} = x$$

$x = 550$

41) 20% rent + 30% food + 10% transport

= saves 18000

x = salary.

total spend = 60%

$40\% \cdot x = 18000$

$\frac{40}{100} x = 18000$

$x = \frac{18000 \times 100}{40}$

$\boxed{x = 45000}$

42) price = 100

30% increase = 130

30% decrease on 130 = 130 - 39 = 91

net change = 100 - 91

% change = -9%

9% decrease.

(43) current pop. = 10,000

after 1 year = 11000

after two year = $11000 + \frac{10}{100} 11000$

$= 12,100$

after 3 year = $12100 + 10\% \cdot 12,100$

$= 13,310.$

(44) 15% of A = 20% of B

A : B = ?

$\frac{15}{100} A = \frac{20}{100} B$

$\frac{A}{B} = \frac{20}{100} \times \frac{100}{15}$

$\frac{A}{B} = \frac{20}{15} \quad \frac{4}{3}$

A : B = 4 : 3

(45) CP = 800 SP = ?

Profit = 25%

25% of 800 = 200

SP = 800 + 200 = 1000

(46) CP = 200

SP = 250

profit % = $\frac{250 - 200}{200} \times 100 = 25\%$

(47) CP = x

SP = x + 20% of x = $1.20x$

$1.20x = 720$

$x = \frac{720}{1.20}$ = 600

(48) CP = 500

loss = 15% of 500 = 75

SP = 500 − 75 = 425

(49) CP = 1500

loss = 10% of 1500 = $\frac{10}{100}$ 1500 = 150

SP = 1500 − 150 = 1350

(50) CP = 100 MP = 100 + 13% of 100 = 130

SP after 10% ~~discount~~ discount

130 − (10% of 130) = 130 − 13 = 117

20

$117 - 100 = 17$

$$\frac{17}{100} \times 100 = 117\%$$