Q1. 25% of 200 is (a)

$\frac{25}{100} \times 200 = 50$ //

Q2. 80 is 40 % of a number (c)

$\therefore 80 = \frac{40}{100} \times x$

$x = 200$ //

Q3. 150 is 75% of a number (b)

$150 = \frac{75}{100} \times x$

$\therefore x = 200$ //

Q4. 15 % of 120 is (c)

$\frac{15}{100} \times 120 = 18$ //

Q5. Price increases from 200 to 250 (b)

% increase is

$\left[\frac{250-200}{200}\right] \times 100 = 25$ //

Q6. 90 is 30 % of a number. (c)

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

$\therefore x = 300$ //

Q8. Population of a town decreases (c)

from 10000 to 8000

$\therefore$ % decrease is

$\left[\frac{10000-8000}{10000}\right] \times 100 = 20$ //

Q7. Salary increases from 40000 to 50000 (b)

$\therefore$ % increase in salary

$\left[\frac{50000-40000}{40000}\right] \times 100 = 25$ //

Q9. Book's price drops from 500 to 400 (c)

% decrease in price

$$\left[\frac{500-400}{500}\right] \times 100 = 20 //$$

Q10. CP = 600 ; SP = 450 (c)

$$\% L = \frac{600-450}{600} \times 100 = 25 //$$

Q11. 30% of 400 40% of 300 (c)

↓ ↓

120 = 120

Q12. Let income be x (c)

40% of x = 8000

x = 20000 //

Q13. A is 20% more than B (b)

If B is 100, A is 120

∴ B is less than A by

$$\frac{120-100}{120} \times 100 = 16.67 //$$

Q14. Price of sugar is increased by 25% (a)

Let p_1 be price per kg & c_1 be inital consumptiong

Initial price = $p_1 c_1$

New price = $p_1 + 0.25 p_1 = 1.25 p_1$

But, New price = Initial price

$$1.25 p_1 c_2 = p_1 c_1$$

$$c_2 = \frac{c_1}{1.25}$$

$$c_2 = 0.8 c_1$$

% reduction in consumption

$$\left[\frac{c_1 - c_2}{c_1}\right] \times 100 = 0.2 \times 100 = 20 //$$

Q15. A's income is 40% more than B (a)

If B's income is 100, A's is 140.

∴ B's income is less than A by

$$\frac{140-100}{140} \times 100 = 28.57\% //$$

Q16. Price of an item is increased by 20% (b)
& then decreased by 10%.

Let price be 100

∴ post increment it is 120

Price after decrement

$120 - (10\% \text{ of } 120) = 108$

Net % change from original price

$$\left[\frac{108-100}{100}\right] \times 100 = 8\% //$$

Q17 Number increased by 30% & then (a)
decreased by 20%

Let number be 100

∴ post increment is 130.

Number post decrement

$$130 - \left[\frac{20}{100} \times 130\right] = 104.$$

Net % change from original price

$$\left[\frac{104-100}{100}\right] \times 100 = 4 //$$

Q18. Population increased by 25% & decreased by 20% (d)

∴ ~~post~~ Let population be 100

After increment 125.

Population post decrement

$$125 - \left[\frac{20}{100} \times 125\right] = 95$$

Net

Net % change change

$$\frac{100-95}{100} \times 100 = 5\%$$

Q19. Price increased by 40% & decreased by 30% (d)

Let number be 100

Post increment 140

Post decrement

$$140 - \left[140 \times \frac{30}{100}\right] = 98$$

Net % change from original price

$$\frac{100-98}{100} \times 100 = 2$$

Q20. Salary is increased by 20% & decreased by 10% (a)

Let salary be 100

Post increment 120

Post decrement

$$120 - \left[120 \times \frac{10}{100}\right] = 108$$

Overall % change

$$\frac{108-100}{100} \times 100 = 8\%$$

Q21. Let CP be 100 (b)

SP = 125

% of SP w.r.t. CP $\frac{125}{100} \times 100 = 125\%$

Q22. Let CP be x (b)

MP = 500

SP = MP - 10% of MP =

$$= 500 - \frac{10}{100} \times 500$$

$$= 450$$

SP = CP + 8% of CP

$450 = x + 0.08x$

$x = \frac{450}{1.08}$

$x = 416.67$ //

$x \simeq 420$

Q23. P is 20% of CP (a)

Let CP = 100

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

SP = 120

Profit percentange on the SP $= \frac{P}{SP} \times 100$

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

$= 16.67$ //

Q24. MP = 1200 SP = 960 (b)

$\text{Discount} = \frac{MP - SP}{MP} \times 100 = \frac{1200 - 960}{1200} \times 100$

$= 20\%$ //

Q25. CP = 500 ; SP = 650 (c)

$\%\ P = \frac{SP - CP}{CP} \times 100 = \frac{650 - 500}{500} \times 100$

$= 30\%$ //

Q26. A's income 20% more than B's. (a)

B's salary be 100

A's salary is 120

∴ B's salary is less than A's by

$\left[\frac{120 - 100}{120}\right] \times 100 = 16.67\%$ //

Q 27. Boys to girls ration is 3:2 (d)

Let there be 100 student

Divide 100 in 5 parts of 20

∴ % of boy is 3 parts of 5 i.e 60%//

Q 28. Population is increased ~~by~~ from 200000 to 250000 (b)

% increase $\frac{250000 - 200000}{200000} \times 100 = 25\%$//

Q 29. 65 % of x no. of votes (d)

65 % of x - 35 % of x = 3000

$0.65x - 0.35x = 3000$

$x = 10000$//

Q 30. Let price be 100 (a)

Price after reduction 70

% ~~in~~crease to restore the original price

$\left[\frac{100 - 70}{100}\right] \times 100 = 30\%$//

Q 31. Let the number be 100 (b)

Post increment is 150

Post decrement

$150 - \left[\frac{150 \times 50}{100}\right] = 75$

Net % change

$\left[\frac{100 - 75}{100}\right] \times 100 = 25\%$

Q 32. A is 20% taller than B (a)

Let B be 100 cm tall

A is 120 cm

B is shorter by A

$\frac{120 - 100}{120} \times 100 = 16.67\%$

Q33. 30% of x is 90 (c)

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

$$x = 300$$

60% of x is

$$\frac{60}{100} \times 300 = 180$$

Q34. Let income be x (c)

25% of x = 5000

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

$$x = 20000$$

Q35. Let price be 100 = p_1

Consumption be 100 = c_1

Expenditure = $p_1 c_1 = 10000 = e_1$

Price post increment $p_2 = 120$ (a)

Now $e_1 = e_2$

$$p_1 c_1 = p_2 c_2$$

$$10000 = (120)(c_2)$$

$$c_2 = \frac{1000}{12} = 83.33 \rightarrow 16.67$$

Q36. Let original price be 100 (a)

Post increment = 120

Post decrement

$$120 - \left[\frac{120 \times 10}{100}\right] = 108$$

Net % change

$$\frac{108 - 100}{100} \times 100 = 8\%$$

Q 37. MP = CP + 25 % of CP Let CP be 100 (a)

= 125 C

SP about 20% discount

SP = MP − 20 % of MP

$= 125 - \frac{20}{100} \times 125$

= 100

Profit or Loss % = SP − CP = 0 %

Q 38. CP = 500 (c)

L % = CP − SP

L = 20 % of 500 = 100

SP = CP − L

= 500 − 100

= 400 C

Q 39. Let salary be 100 (b)

10 % increase = 110

10 % decrement = $110 - 110 \times \frac{10}{100} = 99$

% change = 1 % decrease

Q 40. Let total mark be x (b)

Passing marks = 0.4 x. = 220

$x = \frac{220}{0.4} = 550$

Q 41. Let salary be x

0.2x + 0.5x + 0.1x + 18000 = x (b)

18000 = 0.4x

x = 45000

Q42. Cost of item be 100 (b)

Post increment = 130

Post decrement

$$130 - \left[130 \times \frac{30}{100}\right] = 91$$

Net % change

$$\frac{100 - 91}{100} = 9\% \text{ decrease}$$

Q43. Current population = 10000 (a)

10 % increase per year of 3 years

After 1 year

$$10000 + \frac{10}{100} \times 10000 = 11000$$

After 2nd year

$$11000 + \frac{10}{100} \times 11000 = 12100$$

After 3rd year

$$12100 + \frac{10}{100} \times 12100 = 13310$$

Q44. $0.15\ A = 0.2\ B$ (b)

$$\frac{A}{B} = \frac{0.2}{0.15} = \frac{4}{3}$$

Q45. $CP = 800 \quad P\% = 25$ (b)

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

$$25 = \frac{SP - 800}{800} \times 100$$

$$SP = 1000$$

Q46. CP = 200 SP = 250 (b)

$$P\% = \frac{SP - CP}{CP} \times 100 = \frac{250 - 200}{200} \times 100 = 25\%$$

Q47. SP = 720 P% = 20 (a)

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

$$20 = \frac{720 - CP}{CP} \times 100$$

$$CP = 600$$

Q48. %L = 15 ; CP = 500 (b)

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

$$15 = \frac{500 - SP}{500} \times 100$$

$$SP = 425$$

Q49. CP = 1500 ; %L = 10 (c)

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

$$10 = \frac{SP - 1500}{1500} \times 100$$

$$SP = 1350$$

Q50. Let CP = 100 (a)

MP = CP + 30% of CP

= 130

SP = MP − 10% of MP

$$= 130 - \frac{10}{100} \times 130$$

= 117

% Gain = 17%