

ASSIGNMENT 1: APTITUDE

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Topic : Percentage & Profit & Loss question Bank

1. What is 25% of 200?

- a) 25
- b) 50
- c) 75
- d) 100

$$\Rightarrow 25\% \text{ of } 200$$
$$\frac{25}{100} \times 200 = 50$$

2. If 40% of a number is 80, what is the number?

- a) 100\
- b) 150\
- c) 200\
- d) 250

$$\Rightarrow 40\% \text{ of } n \text{ is } 80$$
$$\frac{40}{100} \times n = 80$$
$$n = \frac{80}{40} \times 100 = 200$$

3. 75% of a number is 150. What is the number?

- a) 175
- b) 200
- c) 225\
- d) 250

$$\Rightarrow 75\% \text{ of } n \text{ is } 150$$
$$\frac{75}{100} \times n = 150$$
$$n = \frac{150}{75} \times 100 = 200$$

4. What is 15% of 120?

- a) 12\
- b) 15\
- c) 18\
- d) 20

$$\Rightarrow \text{15% of } 120$$
$$\frac{15}{100} \times 120 = 18$$

5. If 30% of a number is 90, then the number is:\

- a) 200\
- b) 250\
- c) 300\
- d) 350

$$\Rightarrow \text{30% of } n \text{ is } 90$$
$$\frac{30}{100} \times n = 90$$
$$n = \frac{90 \times 100}{30} = 300$$

6. The price of a product increases from ₹200 to ₹250. What is the percentage increase?

- a) 20%\
- b) 25%
- c) 30%\
- d) 35%

$$\Rightarrow 200 \rightarrow 250$$
$$\text{Percentage Inc} \Rightarrow \frac{50}{200} \times 100 = 25\%$$

7. A salary increases from ₹40,000 to ₹50,000. What is the percentage increase?

- a) 20%
- b) 25% ✓
- c) 30%
- d) 35%

$$\Rightarrow 40000 \rightarrow 50000$$

Percentage Inc $\Rightarrow \frac{10000}{40000} \times 100 = 25\%$

8. The population of a town decreased from 10,000 to 8,000. What is the percentage decrease?

- a) 10%
- b) 15%
- c) 20% ✓
- d) 25%

$$\Rightarrow 10000 \rightarrow 8000$$

Percentage Dec $\Rightarrow \frac{2000}{10000} \times 100 = 20\%$

9. A book's price drops from ₹500 to ₹400. What is the percentage decrease?

- a) 10%
- b) 15%
- c) 20% ✓
- d) 25%

$$\Rightarrow 500 \rightarrow 400$$

Percentage Dec $\Rightarrow \frac{100}{500} \times 100 = 20\%$

10. If the cost price of an item is ₹600 and the selling price is ₹450, what is the percentage loss?

- a) 20%
- b) 22.5%
- c) 25% ✓
- d) 30%

$$\Rightarrow CP = 600 // SP = 450$$
$$\text{Loss} = 150$$
$$L\% = \frac{150}{600} \times 100 = 25\%$$

Section 3: Percentage Comparison

11. Which is greater: 30% of 400 or 40% of 300?

- a) 30% of 400\
- b) 40% of 300\
- c) Both are equal\
- d) Cannot be determined

$$\Rightarrow \begin{array}{l} 30\% \text{ of } 400 \\ 40\% \text{ of } 300 \end{array}$$
$$\begin{array}{r} 30 \times 400 \\ 100 \\ \hline 120 \end{array} \quad \begin{array}{r} 40 \times 300 \\ 100 \\ \hline 120 \end{array}$$
$$120 = 120$$

12. A person spends 60% of his income and saves ₹8,000. What is his total income?

- a) ₹15,000\
- b) ₹18,000\
- c) ₹20,000\
- d) ₹25,000

$$\Rightarrow n - \frac{60}{100} \times n = 8000$$
$$100n - 60n = 800000$$
$$40n = 800000$$
$$n = \frac{800000}{40} = 20000$$

13. If A is 20% more than B, then B is how much less than A?

- a) 20%\
- b) 16.67%\
- c) 25%\
- d) 10%

$$\Rightarrow \begin{array}{l} A \text{ is } 20\% \text{ more than } B \\ B \text{ is ? \% less than } A \end{array}$$

if B is 100
then A is 120

$$\frac{20}{120} \times 100 = \frac{100}{6} = 16.67\%$$

14. If the price of sugar is increased by 25%, by how much should the consumption be reduced to maintain the same expense?

- a) 20%
- b) 25%
- c) 30%
- d) 15%

\Rightarrow Price increase 25%.

Price	Consumption
100	100
\uparrow 25	$80 \downarrow$
$1.25 \times 100 = 125$	
125	
$100 - 20 < 80$	

15. If A's income is 40% more than B's income, then B's income is what percentage less than A's?

- a) 28.57%
- b) 30%
- c) 33.33%
- d) 40%

\rightarrow A is 40% more than B
 B is ?% less than A

B is 100
A is 140
$\frac{40}{140} \times 100 = \frac{400}{14} = 28.57\%$

16. The price of an item is increased by 20% and then decreased by 10%. What is the net percentage change?

- a) 8% increase
- b) 8% decrease
- c) 10% increase
- d) 10% decrease

\Rightarrow 20% increase.
 $n = 100$
 increased $n = 120$

10% decrease.
 $n = 120$
 decreased $n = 108$
 Total increase = 8%.

17. A number is increased by 30% and then decreased by 20%. What is the final percentage change?

- a) 4% increase\
- b) 8% increase\
- c) 10% increase\
- d) 12% increase

⇒ 30% increase .

$$n = 100$$

$$\text{increased } n = 130$$

20% decrease .

$$n = 130$$

$$\text{decreased } n = 130 - 26 = 104$$

$$\text{Total increase} = 4\%$$

18. If the population of a city increases by 25% and then decreases by 20%, what is the net percentage change?

- a) 0%
- b) 5% increase\
- c) 10% decrease\
- d) 5% decrease

⇒ 20% increase .

$$n = 100$$

$$\text{increased } n = 120$$

10% decrease .

$$n = 120$$

$$\text{decreased } n = 108$$

$$\text{Total increase} = 8\%$$

19. If a price increases by 40% and then decreases by 30%, the final change is:

- a) 2% increase\
- b) 10% increase\
- c) 10% decrease\
- d) 2% decrease

⇒ 40% increase

$$n = 100$$

$$\text{inc } n = 140$$

30% decrease .

$$n = 140$$

$$\text{dec } n = 140 - 42 = 98$$

$$\text{Total decrease} = 2\%$$

20. The salary of a person is first increased by 20% and then decreased by 10%. What is the overall percentage change?

- a) 8% increase\
- b) 10% increase\
- c) 10% decrease\
- d) No change

$$\begin{aligned}
 &\Rightarrow 20\% \text{ increase} \\
 n &= 100 \\
 \text{inc } n &= 120 \\
 \\
 &\text{10\% decrease} \\
 n &< 120 \\
 \text{dec } n &= 120 - 12 = 108 \\
 \text{Total} &= 8\% \text{ increase}
 \end{aligned}$$

21. If an article is sold at a profit of 25%, then the selling price is what percentage of the cost price?%

- a) 100%\
- b) 125%**
- c) 150%\
- d) 175%

$$\begin{aligned}
 &\Rightarrow \text{Profit } 25\% \\
 n &= 100 \\
 \text{profit SP} &= 125 \\
 \\
 &\frac{125}{100} \times 100 = 125\%
 \end{aligned}$$

22. A shopkeeper allows a discount of 10% on the marked price and still makes a profit of 8%. If the marked price is ₹500, what is the cost price?%

- a) ₹400\
- b) ₹420**
- c) ₹450\
- d) ₹460

$$\begin{aligned}
 &\Rightarrow MP = 500 \\
 \text{Disc} &= 10\% \\
 SP &= 450 \\
 \text{Profit} &= 8\% \\
 CP &= \cancel{450} \quad 450 \times 1.08 \\
 &= 490 \Rightarrow 420 \text{ Appor.}
 \end{aligned}$$

23. If the profit is 20% of the cost price, then what is the profit percentage on the selling price?

a) 16.67%

b) 18%

c) 20%

d) 22%

$$\Rightarrow P\% = 20\% \text{ on CP}$$

$$CP = 100$$

$$SP = 120$$

$$\text{Profit} = 20$$

$$\text{Percent on SP} = \frac{20}{120} \times 100 = \frac{100}{6} = 16.67\%$$

24. A product is marked at ₹1,200 and sold for ₹960. What is the percentage discount given?

a) 15%

b) 20%

c) 25%

d) 30%

$$\Rightarrow MP = 1200$$

$$SP = 960$$

$$D\% = \frac{1200 - 960}{1200} \times 100 = \frac{240}{12} = 20\%$$

25. If an article is bought for ₹500 and sold for ₹650, what is the percentage profit?

a) 20%

b) 25%

c) 30%

d) 35%

$$\Rightarrow CP = 500$$

$$SP = 650$$

$$P = 150$$

$$P\% = \frac{150}{800} \times 100 = 30\%$$

26. If A's income is 20% more than B's, then B's income is what percentage less than A's?

a) 16.67%

b) 18%

c) 20%

d) 25%

\rightarrow A is 20% more than B
 B is 2% less than A.
 B = 100
 A = 120

$$\frac{20 \times 100}{120} = \frac{100}{6} = 16.67\%$$

27. If the ratio of boys to girls in a school is 3:2, what percentage of the total students are boys?

- e) 30%
- f) 40%
- g) 50%
- h) 60%**

\Rightarrow Boys to girls $\Rightarrow 3:2$
 $3n + 2n = 100$
 $n = 20$
 60% boys 40% girls.

28 A city's population increased from 2,00,000 to 2,50,000 in 2 years. What is the percentage increase?

- a. 20%
- b. 25%**
- c. 30%
- d. 35%

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

29 In an election, a candidate gets 65% of the total votes and wins by 3000 votes. How many total votes were cast?

- a. 5000
- b. 6000
- c. 8000
- d. 9000
- e. 10000 😊**

$$\Rightarrow \frac{65n}{100} - \frac{35n}{100} = 3000$$

$$\frac{30n}{100} = 3000 \Rightarrow n = \frac{3000 \times 100}{30} = 10000$$

- 30 The price of an article is reduced by 30%. By what percentage must the new price be increased to restore the original price?

- a. 30%
- b. 42.85%
- c. 50%
- d. 60%

\Rightarrow Decrease by 30%.

$n = 100$

decreased $n = 70$

increase % = $\frac{30 \times 100}{70} = \frac{300}{7} = 42.85\%$.

- 31 If a number is increased by 50% and then decreased by 50%, what is the net percentage change?

- a. 0%
- b. 25% decrease
- c. 50% decrease
- d. 75% decrease

\Rightarrow Increase by 50%.

$n = 100 \rightarrow 150$

Decrease by 50%.

$n = 150 \rightarrow 75\%$.

Total $\rightarrow -25\%$.

- 32 If A is 20% taller than B, then B is shorter than A by:

- a. 16.67%
- b. 18%
- c. 20%
- d. 25%

\Rightarrow A is 20% more than B

B is 2% less than A.

$B = 100$

$A = 120$

$\frac{20 \times 100}{120} = \frac{100}{6} = 16.67\%$.

- 33 If 30% of a number is 90, what is 60% of the same number?

- a. 120
- b. 150
- c. 180
- d. 200

$\Rightarrow 30\% \text{ of } n = 90$

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

$$n = \frac{9000}{300} = 300$$

$$60\% \text{ of } 300 = \frac{60}{100} \times 300 = 180$$

- 34 A person spends 75% of his income and saves ₹5000. What is his total income?

- a. ₹15,000
- b. ₹18,000
- c. ₹20,000
- d. ₹25,000

$\Rightarrow 25\% \text{ of } n = 5000$

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

$$n = \frac{500000}{25} = 20000$$

- 35 The price of petrol increases by 20%. By what percentage should consumption be reduced to maintain the same expense?

- a. 16.67%
- b. 18%
- c. 20%
- d. 25%

\Rightarrow Price

100

120 ↑

Consumption.

100

83.33 ↓

$$20 \times 100 = 100 = 16.67$$

120 6

- 36 The price of a TV was first increased by 20% and then decreased by 10%. What is the overall percentage change?

- a. 8% increase
- b. 10% increase
- c. 10% decrease
- d. No change

$\Rightarrow 20\% \text{ increase}$

$n = 100$

inc $n = 120$

10% decrease.

$n = 120$

dec $n = 120 - 12 = 108$

Total = 8% increase

37 A shopkeeper marks an item 25% above the cost price and gives a 20% discount. What is his profit/loss percentage?

- a. 0%
- b. 2% profit
- c. 5% profit
- d. 10% loss

$$\begin{aligned}\Rightarrow CP &= 100 \\ MP &= 100 + 25 = 125 \\ Disc &= 125 - \frac{20 \times 125}{100} = 100 \\ &\text{No Profit or Loss.}\end{aligned}$$

38 If the cost price of an article is ₹500 and it is sold at a loss of 20%, what is the selling price?

- a. ₹350
- b. ₹375
- c. ₹400
- d. ₹450

$$\begin{aligned}\Rightarrow CP &= 500 \\ L\% &= 20\% \\ SP &= 500 - \frac{500 \times 20}{100} = 500 - 100 \\ &= 400\end{aligned}$$

39 If a salary is increased by 10% and then decreased by 10%, what is the final percentage change?

- a. 0%
- b. 1% decrease
- c. 1% increase
- d. 2% decrease

$$\begin{aligned}\Rightarrow S &= 100 \\ &\text{increase by } 10\% \\ S &= 100 + 10 = 110 \\ &\text{decrease by } 10\% \\ S &= 110 - 11 = 99 \\ &\text{Total = 1% decrease.}\end{aligned}$$

40 A student needs 40% marks to pass. He gets 200 marks and fails by 20 marks. What are the total marks?

- a. 500
- b. 550
- c. 600
- d. 650

$$\Rightarrow 40\% \text{ of } n = 220$$

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

$$n = \frac{22000}{40}$$

$$n = 550.$$

41 A man spends 20% of his salary on rent, 30% on food, and 10% on transport. If he saves ₹18,000, what is his salary?

- a. ₹40,000
- b. ₹45,000
- c. ₹50,000
- d. ₹55,000

$$\Rightarrow 40\% \text{ of } n = 18000$$

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

$$n = \frac{18000 \times 100}{40} = 45000$$

42 The cost of an item is first increased by 30% and then decreased by 30%. What is the overall percentage change?

- a. 0%
- b. 9% decrease
- c. 9% increase
- d. 15% decrease

\Rightarrow Increase by 30%.

$$100 \rightarrow 130$$

$$n \rightarrow 130$$

Decrease by 30

$$n \rightarrow 130$$

$$n = 130 - 39 = 91$$

Total = 9% decrease.

43) The population of a town increases by 10% every year. If the current population is 10,000, what will it be after 3 years?

- a) 13,310
- b) 13,500
- c) 14,000
- d) 14,200

$$\Rightarrow P = 10000$$

Increase by 10%.

$$P = 11000$$

Increase by 10%.

$$P = 12100$$

Increase by 10%.

$$P = 12100 + 1210$$
$$= 13310$$

44) If 15% of A is equal to 20% of B, then A:B is:

- a) 3:4
- b) 4:3**
- c) 3:5
- d) 5:3

$$\Rightarrow \frac{15}{100}a = \frac{20}{100}b$$
$$3a = 4b \quad : \quad \frac{3}{4} = \frac{b}{a} = 4 : 3$$

$\boxed{3:4}$ $\boxed{b:a}$ $\boxed{a:b}$

45) If the cost price of an item is ₹800 and the profit made is 25%, what is the selling price?

- a) ₹900
- b) ₹1000**
- c) ₹1050
- d) ₹1100

$$\Rightarrow CP = 800$$
$$P\% = 25\%$$
$$SP = 800 + 25\% \cdot CP$$
$$SP = 800 + 200 = 1000$$

46) If the cost price (CP) of an item is ₹200 and the selling price (SP) is ₹250, what is the profit percentage?

- a) 20%
- b) 25%
- c) 30%
- d) 40%

$$\Rightarrow CP = 200$$
$$SP = 250$$
$$P\% = \frac{50}{200} \times 100 = 25\%$$

47) A man sells an article for ₹720 at a profit of 20%. Find the cost price.

- a) ₹600
- b) ₹620
- c) ₹650
- d) ₹700

$$\Rightarrow SP = 720$$
$$P\% = 20\%$$
$$CP = 720 \times 1.2 = 600$$

48) A shopkeeper sells an item at a loss of 15%. If the cost price is ₹500, find the selling price.

- a) ₹400
- b) ₹425
- c) ₹450
- d) ₹475

$$\Rightarrow CP = 500$$
$$L\% = 15\%$$
$$SP = 500 - 15\% \cdot CP$$
$$= 500 - 75 = 425$$

49) A man purchased a cycle for ₹1500 and sold it at a loss of 10%. What was the selling price?

- a) ₹1200
- b) ₹1300
- c) ₹1350
- d) ₹1400

$$\Rightarrow CP = 1500$$
$$L\% = 10\%$$
$$SP = 1500 - 10\% \cdot CP$$
$$= 1500 - 150$$
$$= 1350$$