

Topic : Percentage & Profit & Loss question Bank

Deadline: Monday 10th March

1. What is 25% of 200?

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

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

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

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

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

4. What is 15% of 120?

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

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

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

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

- a) 20%\

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

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

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

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%

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

- a) 10%\
- b) 15%\
- c) 20%\
- d) 25%

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%

1. ### **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

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

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%

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%

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%

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

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
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
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
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
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%
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

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%

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%

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%

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%

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%

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%
- 29 In an election, a candidate gets 65% of the total votes and wins by 3000 votes. How many total votes were cast?
- 5000
 - 6000
 - 8000
 - 9000
- 30 The price of an article is reduced by 30%. By what percentage must the new price be increased to restore the original price?
- 30%
 - 42.85%
 - 50%
 - 60%
- 31 If a number is increased by 50% and then decreased by 50%, what is the net percentage change?
- 0%
 - 25% decrease
 - 50% decrease
 - 75% decrease
- 32 If A is 20% taller than B, then B is shorter than A by:
- 16.67%
 - 18%
 - 20%
 - 25%
- 33 If 30% of a number is 90, what is 60% of the same number?
- 120
 - 150
 - 180
 - 200
- 34 A person spends 75% of his income and saves ₹5000. What is his total income?
- ₹15,000

- b. ₹18,000
 - c. ₹20,000
 - d. ₹25,000
- 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%
- 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
- 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
- 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
- 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
- 40 A student needs 40% marks to pass. He gets 200 marks and fails by 20 marks. What are the total marks?
- 500
 - 550
 - 600
 - 650
- 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?
- ₹40,000
 - ₹45,000
 - ₹50,000
 - ₹55,000
- 42 The cost of an item is first increased by 30% and then decreased by 30%. What is the overall percentage change?
- 0%
 - 9% decrease
 - 9% increase
 - 15% 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?
- 13,310
 - 13,500
 - 14,000
 - 14,200
- 44) If 15% of A is equal to 20% of B, then A:B is:
- 3:4
 - 4:3
 - 3:5
 - 5:3
- 45) If the cost price of an item is ₹800 and the profit made is 25%, what is the selling price?
- ₹900
 - ₹1000
 - ₹1050
 - ₹1100
- 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%

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

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

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

50) A trader marks his goods at 30% above the cost price and allows a discount of 10%. What is his gain percent?

- a) 17%
- b) 18%
- c) 19%
- d) 20%

Aptitude

Assignment No - 2

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Q. 1. What is 25% of 200%?

$$\rightarrow \frac{25}{100} \times 200\% \\ = 50\%$$

2) If 40% of a number is 80, what is no?

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

3) 75% of a number is 150, what is the no?

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

Q. 4) What is 15% of 120?

$$\rightarrow \frac{15}{100} \times 120 = 18\%$$

Q. 5) If 30% of a number is 90, then the number is

$$\frac{x \times 30}{100} = 90 \\ x = \frac{90 \times 100}{30} \\ x = 300$$

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

$$\rightarrow \frac{\text{increase in price}}{\text{original price}} \times 100$$

$$\begin{aligned}
 &= \frac{250 - 200}{200} \times 100 \\
 &= \frac{50}{200} \times 100 \\
 &= \frac{1}{4} \times 100 \\
 \boxed{\% \text{ increase} = 25\%}
 \end{aligned}$$

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

$$\rightarrow \% \text{ increase} = \frac{50000 - 40000}{40000} \times 100$$

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

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

$$\rightarrow \% \text{ decrease} = \frac{10000 - 8000}{10000} = 20\%$$

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

$$\rightarrow \% \text{ decrease} = \frac{500 - 400}{500} = \frac{100}{500} = 20\%$$

Q. If the cost of price of an item is 600 & the selling price is 400-450, what is percentage loss?

$$\rightarrow \% \text{ loss} = \frac{600 - 450}{600} = \frac{150}{600} = 25\%$$

section 3: percentage

Q. Which is greater: 30% of 400 or

40% of 300

$$\rightarrow \text{i)} \frac{30}{100} \times 400 = 120$$

$$\text{ii)} \frac{40}{100} \times 300 = 120$$

Both are equal.

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

$$\rightarrow \text{Saving} = 100 - 60 \\ = 40\%$$

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

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

$$x = 20000$$

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

$$\rightarrow b = 100$$

$$a = 120\% \text{ of } b$$

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

$$a = 120$$

$$\text{Now } B = \frac{120 \times 100}{120} \times 5 \\ \text{if decrease}$$

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

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

$$= \frac{1}{6} \times 100 = 16.67\%$$

Q. If the price of sugar is increased by 25%.
by how much should the consumption be
reduced to maintain the same expense?
→ at the original price of sugar = Rs. 100

5 25% increase = Rs. 125

On Rs. 125, the price should be decreased by
- Rs. 25

on Rs. 1, the price should be decreased by
- Rs. 25

$$\frac{1}{125} \times 100$$

Rs. 20

15 Price should be decreased by 20%

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

→ 20 Suppose B's income = 100

A's income = 140

B's income = $140 - 100$

$$\frac{100}{140} \times 100$$

$$= \frac{9}{14} \times 100$$

$$= 64.2857\%$$

16)

$$\cancel{20 - 10 - \frac{(200/100)}{100}}$$

$$= 20 - 10 + \frac{(20)(-10)}{100}$$

$$= 10 - \frac{(200/100)}{100}$$

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

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

→ of 4% , Suppose value = 100

$$\textcircled{1} \quad 30\% \text{ of } 100\% = 30$$

$$20\% \text{ of } 130 = 26$$

$$\text{Net change} = 130 - 100 = 4$$

18) If the population of city increased by 25% & decreased by 20% . What is the % change?

→ ~~100~~ Initial

$$\text{Initial population} = 100$$

$$25\% \text{ increase} = 125$$

$$\text{Then } 20\% \text{ decrease} = \cancel{125 \times 20} \frac{100}{100}$$

$$\text{So } \% \text{ change} = \frac{25 - 100}{100} = -75\%$$

19) If a price increased by 40% & then decreased by 30% what is % change

→ 40% price increase = 140%
 then 30% price decrease = $140 \times 30 \frac{100}{100} = 110$

% change

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

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

$$\rightarrow 20\% \text{ increase} = 120$$

$$\text{then } 10\% \text{ decrease} = 120 \times \frac{9}{10} = 108.$$

$$\therefore \text{change} = 18\% \text{ increase}$$

Q.21) If an article is sold at 25%, the S.P. is what % of C.P.

$$\rightarrow \text{Let C.P.} = 100$$

$$\text{profit is } 25\% \text{ C.P}$$

$$\text{Profit} = 25$$

$$S.P. = C.P + \text{Profit}$$

$$S.P. = 100 + 25 =$$

$$S.P. \text{ as } \% \text{ of C.P.}$$

Q.22) A shopkeeper allows a discount of 10% on the marked price & still makes a profit of 8%. If the marked price is Rs. 500.

What is cost price?

$$M.P. = \text{Rs. } 500$$

$$\text{Discount} = 10\%.$$

$$\text{Profit} = 8\%$$

Calculate the selling price (S.P.).

Discounted price

$$= 10\% \text{ of } 500 = \frac{10}{100} \times 500$$

$$= 50$$

$$S.P. = 500 - 50 = 450$$

$$S.P. = 108\%$$

$$\therefore \frac{450}{1.08} = 416 \approx 420$$

Q.23) If the profit 20% of CP. What is the % on the S.P?

→ Let CP = 100

$$\text{Profit} = 20\% \text{ of CP}$$

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

$$SP = CP + \text{Profit}$$

$$= 100 + 20$$

$$\text{Profit \% of SP} = \frac{20}{120} \times 100$$

$$= \left(\frac{\text{Profit}}{\text{Selling price}} \right) \times 100$$

$$= \frac{20}{120} \times 100 = 16\frac{2}{3}$$

Q.24) A product is marked at Rs. 1200, if sold for Rs. 960. What is the percentage discount given?

$$\text{Discount \%} = \frac{M.P - S.P}{M.P} \times 100$$

$$= \frac{1200 - 960}{1200} \times$$

$$= \frac{240}{1200} \times$$

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

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

$$= 20\%$$

Q.25) If an article is bought for Rs. 500 and sold for Rs. 650, what is the % profit?

$$CP = 500$$

$$SP = 650$$

$$\% \text{ profit} = \frac{150}{500} \times 100$$

$$\% \text{ profit} = 30\%$$

Q.20) If A's income is 20% more than B's then income is what % less than A?

$$\rightarrow \text{Let B's income} = 100$$

$$\text{A's income} = 20\% \text{ more than B}$$

$$= 120\% B$$

$$\therefore \text{decrease} = \frac{A - B}{B} \times 100$$

$$\left[\begin{array}{l} A = 120 \\ B = 100 \end{array} \right]$$

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

Q.21) If the ratio of boys in a school is 3:2, what is the total students are boys?

$$\rightarrow \text{Let no. of boys} = 3x$$

$$\text{No. of girls} = 2x$$

$$\text{Total no. of students} = 3x + 2x = 5x$$

$$\% \text{ of boys} = \frac{\text{no. of boys}}{\text{Total no. of students}} \times 100$$

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

$$= 60\%$$

Q.22) A city's population increased from 2,00,000 to 2,50,000 in 2 years. What is the increase?

$$\% \text{ increase} = \frac{\text{New value} - \text{Old value}}{\text{Old value}} \times 100$$

$$\begin{aligned}
 &= 2,50,000 - 2,00,500 \\
 &= 200000 \\
 &= \frac{50,000}{2,00,000} \times 100 \\
 &= 25\%
 \end{aligned}$$

Q.28) In an election, a candidate gets 65% of the total votes & wins by 30000 votes. How many total votes are cast?

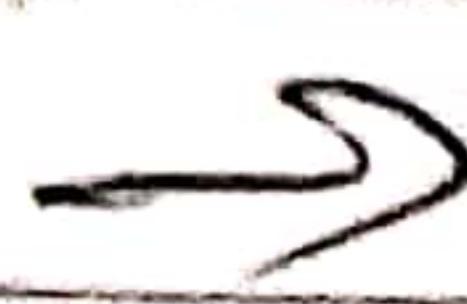


winning candidate gets is $0.65V$
 losing candidate gets $= 0.35V$

$$0.65V - 0.35V = 3000$$

$$\begin{aligned}
 0.30V &= 3000 \\
 V &= 10,000
 \end{aligned}$$

Q.29) The price of an article reduced by 30% by what % must the new price be increased to restore the o.p.



Let original price = 100

$$\text{New price} = 100 - 30 = 70$$

To restore the o.p (Rs. 100) we need to increase M.P. by certain %

$$\begin{aligned}
 \% \text{ increase} &= \frac{70 - 100}{100} \times 100 \\
 &= 70\%
 \end{aligned}$$

$$\begin{aligned}
 \frac{70}{100} &= 0.7x \\
 x &= 42.857
 \end{aligned}$$

Q. If a no. is increased by 50% & then decreased by 50%, what is the net % change?

$$\rightarrow \% \text{ increase} = 150\%$$

$$\% \text{ decrease} = 50 \times \frac{100}{100} = 25$$

$$= 100 - 25$$

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

$$(\text{decrease by } = -25)$$

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

$$A = 120\% B$$

$$\text{diff.} = 120B - B = 20B$$

$$\% \text{ diff.} = 16.67\%$$

Q. If 30% of a number is 90, go what is 60% of the same number?

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

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

$$x = 300$$

$$60\% \text{ of the same no.} = \frac{60}{100} \times 300$$

$$= 180$$

Q. 34) A person spends 75% of his income & save Rs. ~~250~~ 5000. What is his total income.

$$\rightarrow \textcircled{1} \text{ spend amount} = \frac{75}{100} x = 0.75x$$

5
② remaining 25% of his income which is 5000

$$\therefore 25 x = 5000$$

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

$$x = 20,000$$

Q. 35) The price of petrol increased by 20%. By what percentage should consumption be reduced to maintain the same expense.

- \rightarrow i) price of petrol increases by 20%.
- ii) Let original price of petrol be Rs. 1/litre
if initial consumption = x litres
Expense = $1 \times x = x$

iii) After a 20% increase, the new price become Rs. 1.20

$$1.20 \times y = x$$

$$y = \frac{x}{1.20}$$

$$\% \text{ reduction} = \frac{x - y}{x} \times 100$$

$$= \frac{x - \frac{x}{1.20}}{1.20} \times 100$$

$$= \frac{0.20}{1.20} \times 100$$

$$= 16.67\%$$

$$x = 16.67\%$$

Q. 36) The price of a TV increased by 20% and decreased by 10%. What is the overall % change?

→ increased = 120%.

$$120 \cancel{+ 10} \\ 100$$

$$120 - 12 = 108$$

$$\% \text{ of overall change} = \frac{108 - 100}{100} \\ = 8\%$$

Q. 37) A shopkeeper marks an item 25% above the cost price & gives a 20% discount. What is profit/loss %?

→ let C.P = 100

M.P is 25% of C.P

$$\begin{aligned} M.P &= C.P \times 25\% \\ &= 100 + 25 \\ &= 125 \end{aligned}$$

Shopkeeper is giving 20% discount on M.P.
→ The discount is 20% of Rs. 125, which is

$$\text{Discount} = \frac{20}{100} \times 125 = 25$$

$$S.P = M.P - \text{Discount} = 125 - 25 = 100$$

For profit & loss

$$C.P = 100 \text{ & } S.P = 100$$

∴ no profit or loss

Q.38) If $C.P = 500$ & $l.o.s = 20\%$, $S.P = ?$

$$S.P = C.P - \left(\frac{20 \times 500}{100} \right)$$

$$= 500 - 100$$

$$\boxed{S.P = 400}$$

Q.39) If a salary increased by 10% & then decreased by 10% . What is final %.

→ increased by $10\% = 110$

↓ decreased by $10\% = 110 \times \frac{10}{100}$

$$= 11$$

∴ After decreasing = 99

Net change = $\frac{99 - 100}{100} \times 100 = -1\%$

Q.40) A student needs 40% marks to pass. He gets 200 marks & fails by 20% . What are the total.

→ Passing marks = 220

40% of total marks = 220

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

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

$$\boxed{T = 550}$$

Q.41) A man spends 20% of his salary on rent, 30% on food & 10% of total spent on shopping. If he saves Rs. 18000, What is his salary.

→ $20\% \times$
 $30\% \text{ of } T$
 $10\% \text{ of } T$
 $\frac{60\%}{}$

remaining 40% of his salary
 $\frac{40}{100} \times 5 = 18,000$

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

$$S = 45000$$

Q.4) Decreased by 30%, decreased by 30%.
overall change

$$\rightarrow \text{after 1st. incr} = 130$$

$$= \frac{30}{100} \times 130 = 39$$

$$\text{overall \% change} = \frac{39}{100}$$

$$= \frac{-9}{100}$$

$$-9\%$$

9% decrease.

Q.4) Population increase by 10% every year
current population = 10,000

What after 3 years?

$$\frac{10}{100} \times 10,000 = 1000$$

$$\therefore \text{For 1st year} = 10000 + 1000$$

$$\text{For 2nd year} = \frac{10}{100} \times 11000$$

$$= 12100$$

$$\text{3rd year} = \frac{10}{100} \times 12100$$

$$= 140$$

$$= 12100 + 140$$

$$= 13310$$

Q.44) If 15% of A = 20% of B, then A is

→

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

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

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

Q.45) If the C.P. = 800, & profit = 25%, then

$$\text{profit} = \text{S.P.} - \text{C.P.}$$

$$\text{S.P.} = 800 + \frac{25 \times 800}{100}$$

$$= 800 + 200$$

$$\text{S.P.} = 1000$$

Q.46) C.P. = 200, S.P. = 250, profit = ?

$$\text{profit} = 250 - 200$$

$$= 50$$

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

Q.47) A man sells an article for Rs 720 at a profit of 20%. Find C.P.

$$720 = \text{C.P.} \times \left(1 + \frac{20}{100}\right)$$

$$720 = \text{C.P.} \times 1.2$$

$$\boxed{\text{C.P.} = 600}$$

Q.59) A man purchased a cycle for Rs. 1000
Rs. 1500 & sold it at 10% of 10%. What was

S.P

$$\rightarrow C.P = 1500$$

$$10\% = 10\%$$

$$S.P = 1500 - \left(10 \times \frac{100}{100} \right) = 1350$$

Q.60 A trader makes up goods at 30% above
the C.P. & allows a discount of 10%.
What is his gain %?

$$\rightarrow M.P = 100 + 30\% \times 100 = 130$$

$$\text{Discount} = 10\% \times 130 = 13$$

$$S.P = 130 - 13$$

$$\% \text{ gain} = \frac{117 - 100}{100} = 17\%$$