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Title: RBI Grade B Percentage: Concepts, Solved Questions, and PDF

Topics Covered: Meaning of Percentage, Fundamental Concepts of Percentage, Meaning of Percentage, A% of B = B% of A, Basic Fractions, Conversion of Percentage Values, Percentage Solved Questions, Percentage Solved PYQs.

Looking for a comprehensive resource that can help you understand the concepts of percentage for your RBI Grade B exam? You have landed on the right article.

Below, we have explained the fundamental concepts related to percentage using relevant examples. In addition, we have also listed solved questions with detailed explanations.

By the time you finish reading this article, you will be able to attempt percentage-related questions with more confidence and agility.

Before getting started with the concepts, let's understand the meaning of percentage.

Meaning of Percentage

Percentage basically means out of 100. Here's an example to help you understand better:

Question. A boy named John scores 400 marks out of 500. What is his percentage score?

Before calculating the percentage, just remember the definition of fractions. Fractions are written in the form of **a/b**, where **a is the impact** and **b is the original value/initial value/100%.**

If you look at the question, 400 (impact) is the mark scored out of 500 (total marks). The fraction would look something like 400/500.

Now, to convert this fraction to a percentage, you need to multiply it by 100 i.e.

400/500*100 = 80%

Fundamental Concepts of Percentage

Here are some fundamental concepts of percentage to help you attempt and solve questions related to percentage in your RBi Grade B exam:

Concept 1: Conversion of Percentage Values

Suppose you are asked to **calculate 45% of 1650**. A general approach would be to remove the percentage i.e. 45/100*1650. However, this approach is quite time-consuming. And you have only so much time to attempt the quant section.

But if you remember these 6 values, you can solve percentage-based questions in less time:

- 100% = 1600
- 50% = 800
- 25% = 400
- 10% = 160
- 5% = 80
- 1% = 16

Here's an explanation of how you can calculate the above values:

- If you want to calculate **100% of 1600**, it would be 1600.
- To calculate **50%,** you can simply **half the total value**.
- To calculate the **25%,** you can further **half the previous value i.e. 800**
- To calculate **10%**, you can **add a decimal after 1 digit** starting from right.
- To calculate **5%**, you can **half the previous value** i.e. 10% of the total.
  - You can also **add a decimal to the 50%** value after 1 digit starting from right.
- To calculate **1%**, you can **add a decimal after 2 digits** starting from right.

Let's apply the above concept and try to calculate different percentages of our initial value i.e. 1600:

- **45% of 1600**: Convert 45% into the above-mentioned 6 values i.e. 45% is also 50% - 5%. You can calculate 50% of 1600 = 800, which is comparatively easier. 10% of 1600 would be 160 and 5% would be half i.e. 80.

  If you subtract 5% from 50% of 1600 i.e. 800-80, you get 720, which is the right answer.

- **49% of 1600**: 49% is also 50% - 1%. 50% is 800 and 1% is 16. So, 49% would be 784 (800-16).

- **63% of 1600:** 63% is also 60% + 3%. To further simplify, you can break 60% into 50% + 10%. 50% of 1600 is 800 and 10% is 160. And 3% is 3 times 1% i.e. 16*3 = 48. So, when you add all these values, you get 1008 (800+160+48).

- **78% of 1600:** 78% is also 80% - 2%. To further simplify, you can break 80% into 8*10% and 2% into 2*1%.

Similarly, you can calculate the value for any percentage. The motive here is to break the percentage into smaller chunks based on the 6 values mentioned above. If you manage to understand and practice this concept, you can orally calculate the answers, saving you a lot of time.

Note. The number "1600" is just an example. You can take any number based on your requirements.

Exercise:

Take a short break of 10 minutes and start solving problems like the ones you just did. You can take any number of your choice. Always remember, you must not cram things when it comes to quant. You need to practice to get better.

Concept 2: A% of B = B% of A

Let's take an example to understand this concept:

80% of 95 = 95% of 80

Let's calculate 95% of 80.

If you apply what we discussed in the previous section 95% of 80 is also 100% - 5%. 100% of 80 is 80 and 5% is 4. So, the value would be 76 (80-4). And if you calculate 80% of 85, you will again get 76 as the answer.

Therefore, **A% of B = B% of A**.

Basic Fractions

Understanding the basic fractions is crucial to help you solve percentage questions with agility.

A complete fraction is denoted by 1. And this value in percentage is 100. In simpler words

1 = 100%

By dividing both sides by the same number, you get:

½ = 50%.

By further dividing both sides by the same number, you get:

⅓ = 33 ⅓% or 33.33%

You can keep dividing the values by the same number to understand the concept of basic fractions. Practicing these fractions can help you solve questions more quickly:

Fractions

$1 = 100\%$

$\frac{1}{2} = 50\%$

$\frac{1}{3} = 33\frac{1}{3}\% = 33.33\%$

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

$\frac{1}{5} = 20\%$

$\frac{1}{6} = 16\frac{2}{3}\% = 16.66\%$

$\frac{1}{7} = 14\frac{2}{7}\% = 14.28\%$

$\frac{1}{8} = 12\frac{1}{2}\% = 12.5\%$

$\frac{1}{9} = 11\frac{1}{9}\% = 11.11\%$

$\frac{1}{10} = 10\%$

$\frac{1}{11} = 9\frac{1}{11}\% = 9.09\%$

$\frac{1}{12} = 8\frac{1}{3}\% = 8.33\%$

$\frac{1}{13} = 7\frac{9}{13}\% = 7.69\%$

$\frac{1}{14} = 7\frac{1}{7}\% = 7.14\%$

$\frac{1}{15} = 6\frac{2}{3}\% = 6.66\%$

$\frac{1}{16} = 6\frac{1}{4}\% = 6.25\%$

$\frac{1}{17} = 5\frac{15}{17}\% = 5.89\%$

$\frac{1}{18} = 5\frac{5}{9}\% = 5.55\%$

$\frac{1}{19} = 5\frac{5}{19}\% = 5.26\%$

$\frac{1}{20} = 5\%$

$\frac{1}{24} = 4\frac{1}{6}\% = 4.16\%$

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

$\frac{1}{30} = 3\frac{1}{3}\% = 3.33\%$

$\frac{1}{32} = 3\frac{1}{8}\% = 3.125\%$

$\frac{1}{40} = 2\frac{1}{2}\% = 2.5\%$

$\frac{1}{50} = 2\%$

Here's how you can use these fractions:

Calculate 87.5% of 1600

87.5% can be written as (100% - 12.5%)

100% of 1600 is 1600 and 12.5% is ⅛ (refer to the screenshot)

So, the answer will be (1600 - (1600/8)) = 1400.

Now that you have learned about the fundamental concepts of percentage, let's apply this knowledge to solve a few questions.

Solved Percentage Example Questions with Explanation

Here are some exam-level percentage questions that you can solve using the basic concepts mentioned in this article:

Question 1

Instructions: Read the following information carefully and answer the questions based on it. The bar graph given below shows the expenditure of five companies in two quarters (T1 and T2) of a year out of total income in these two quarters.
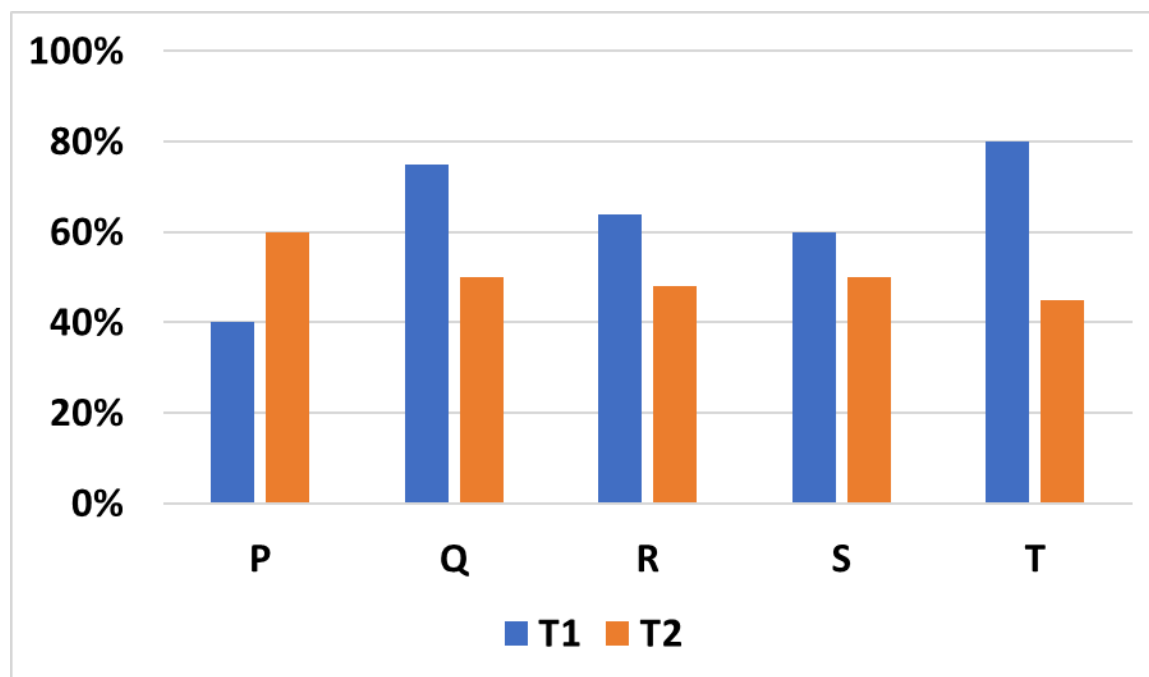
Q.1) If the income of each company for T2 is twice that of T1, if one seventh of the sum of savings of company S for both quarters is Rs. 13500. Find the savings of company Q in T2 if income of Q in T1 is 60% as that of company S in T1.

[1] Rs. 40600
[2] Rs. 42500
[3] Rs. 40500
[4] Rs. 42600
[5] None of these

Explanation and Answer

Here's the information given in the instructions:

- T1 and T2 represent the expenditure of 5 companies in quarters 1 and 2, respectively.
- The expenditure is given in the y-axisis in percentage form.
- If the expenditure of the company P in T1 is 40%, their savings would be 60%.

After reading the question, we can say the income of each company in T2 is 2 times that of T1. So, if the income of P in T1 is 100x, it's income in T2 will be 200x.

Next statement: **If 1/7th of the sum of savings of company S for both quarters is 13500.**

For company S, expenditure in T1 is 60% and T2 is 50%. So, the savings for T1 and T2 would be 40x (100% - 60%) and 100x (2*(100%-50%)), respectively.

Note. We multiplied the savings of Tbyth 2 as the income in T2 is twice the income in T1.

1/7 (40x + 100x) = 13500
20x = 13500
x = 675

Now, you need to calculate the savings of company Q in T2 if the income of Q in T1 is 60% as that of company S in T1.

- Income of company Q in T1 is = 60% of the income of company S in T1
- Income of company S is = 100x
- Income of Q in T1 is 60x
- Income of company Q in T2 = 2*60x i.e. 120x
- Savings of company Q in T2 = 50x as the expenditure is 50%
- Savings of company Q in T2 is: 50x of the income of Q in T2 i.e. 60x

Value of **x** is 675

Therefore, the savings of company in Q in T2 will be = 60 * 675 i.e. Rs. **40500**

Answer: [3]

Let's take another question.

Question 2

Maya's monthly salary is 60% more than that of Swevi. Both Swevi and Maya, out of their respective monthly salary, pay equal sum towards EMI. Out of remaining monthly salary, Maya

and Swevi, spend a certain amount towards house rent. Amount that Swevi pays towards EMI is 20% of her monthly salary. Amount that Maya pays towards house rent is 'x' times of that she pays towards EMI.

I: Find the total savings of Maya if her expenditure on EMI and house rent is just half of total salary. Also, EMI expense of Swevi is Rs 30000. It is to be assumed that Maya and Swevi had only two expenses from their salaries i.e. EMI and house rent.

II: Difference between house rents paid by Maya and Swevi is Rs 10000. House rent paid by Maya is Rs 6000 more than EMI paid by her. If house rent paid by Swevi is 33.33% of EMI paid by Maya, then, salary of Maya is?

[a] Rs. 30000, Rs. 36000
[b] Rs. 45000, Rs. 60000
[c] Rs. 120000, Rs. 48000
[d] Rs. 75000, Rs. 48000
[e] Rs. 135000, Rs. 60000

Explanation and Answer

The first thing you need to do is read the question carefully. Here are the observations:

- There are two people, **Maya** and **Swevi.**
- Maya's salary is 60% more than that of Swevi.

Let's assume **Swevi's salary** is **500a.** And **Maya's** salary is 60% more i.e. (50%+10%) of 500a + 500a

Maya's salary will be (250a + 50a) + 300a = **800a**

- Both Maya and Swevi are paying an equal amount in EMI.
- Swevi's EMI is 20% of her monthly salary.
- Swevi's EMI is 20% of 500a = 100a
- Maya's EMI is also = 100 a
- Maya's house rent is x times of her EMI i.e. 100ax

After understanding the question, let's dive into the statements:

Statement 1: Find the total savings of Maya if her expenditure on EMI and house rent is just half of total salary.

EMI + House Rent = Salary/2
100a + 100ax = 400a
100ax = 300a

100a * x = 100a * 3
x = 3

EMI expenses of Swevi is 30,000, meaning 100a = 30,000
a = 300
EMI and house arent are the only expenses.

Maya's income is 800 a. So, the value would be 800*300 = 240,000
Maya's EMI is 100a or 30,000
Maya's House Rent is 100ax = 100a*3 or 30,000*3 = 90,000
Maya's total expenses = 90,000+30,000 = 120,000
Maya's total savings would be: Income - Expenses i.e. 240,000 - 120,000 = 120,000

If you look at the options given in the answers, there's only one option which includes: 120,000. This means, you need not solve the 2nd statement, saving you a lot of time.

Question 3 (Fractions)

Quantity I: If numerator of a fraction is increased by 25% and denominator of the fraction is increased by 20%, the fraction becomes 5/6. Find the original fraction.

Quantity II: If numerator of a fraction is decreased by 15% and denominator of the fraction is decreased by 10%, the fraction becomes 17/24. Find 80% of the original fraction.

Quantity III: If numerator of a fraction is increased by 10% and denominator of the fraction is decreased by 10%, the fraction becomes 11/10. Find 1/3rd of the original fraction.

You need to create a relation between the above quantities using the below signs.

a) <, =

b) =, =

c) ≤, ≥

d) <, >

e) >, >

Explanation and Answer

Let's start with Quantity I.

Quantity I
If the numerator of a fraction is increased by 25% and the denominator of the fraction is increased by 20%, the fraction becomes 5/6. Find the original fraction.

Let's assume our original fraction is: x/y

You must note that:

- Whenever a value increases in fraction, it increases above 100.
- Whenever a value decreases in fraction, it decreases below 100.

The above is true because every complete value is 100%.

Numerator of Quantity I is increased by 25% = x * 125%
Denominator of Quantity I is increased by 20% = y * 120%

$$\frac{x * 125\%}{y * 120\%} = \frac{5}{6}$$

$$\frac{x}{y} = \frac{4}{5} = 0.8$$

Quantity II
If numerator of a fraction is decreased by 15% and denominator of the fraction is decreased by 10%, the fraction becomes 17/24. Find 80% of the original fraction.

Numerator of Quantity II is decreased by 15% = x * 85%
Denominator of Quantity II is decreased by 10% = y * 90%

$$\frac{x * 85\%}{y * 90\%} = \frac{17}{24}$$

$$\frac{x}{y} = \frac{3}{4} * \frac{80}{100} = 0.6$$

Quantity III
If numerator of a fraction is increased by 10% and denominator of the fraction is decreased by 10%, the fraction becomes 11/10. Find 1/3rd of the original fraction.

Numerator of Quantity III increased by 10% = x * 110%
Denominator of Quantity III is decreased by 10% = y * 90%

$$\frac{x * 110\%}{y * 90\%} = \frac{11}{10}$$

$$\frac{x}{y} = \frac{9}{10} * \frac{1}{3} = 0.3$$

Creating a relation between the three quantities: Quantity I > Quantity II > Quantity III

0.8 > 0.6 > 0.3

Answer = Option e)

Here's a complete video that explains the concepts of Percentage and discusses relevant questions.

https://www.youtube.com/watch?v=iZxF7V0tYfQ&list=PPSV

RBI Grade B Percentage Shortcuts and Tricks

Shortcuts and tricks can be monumental in solving percentage questions in the RBI Grade B exam. Using these techniques, you can solve the questions more quickly and with accuracy.

And guess what? You have already learned about the percentage shortcuts and tricks in the form of concepts in the above sections. Here's how:

1. **Conversion of Percentage Values**

Using this concept or shortcut, you can calculate the percentage of any number no matter how complex, within seconds. All you have to do is convert your number into these values (assuming your number is 1600) :

- 100% = 1600
- 50% = 800
- 25% = 400
- 10% = 160
- 5% = 80
- 1% = 16

To make it more easy, we have replaced the number with x:

100% = x
50% = x/2
25% = x/4
10% = x/10
5% = x/20
1% = x/100

Just replace x with your number and you can calculate the percentage very quickly.

Similar to this concept, you can also refer to:

2. A% of B = B% of A
Let's assume you're asked to calculate 18% of 50.

While you can calculate this easily by converting 18% into 10% + 8*1% (5+8*0.5 i.e. 9), there's an even faster method.

According to the concept of **A% of B = B% of A,** 18% of 50 = 50% of 18.

And calculating 50% of 18 is far easier: 9 i.e. 18/2 (applying Conversion of Percentage Values)

3. Basic Fractions
By referring to this section and practicing the fractional values, you can significantly improve your agility. How? Let's suppose you need to calculate the value of:

87.5% of 1600
87.5% can be written as (100% - 12.5%)

If you've gone through the fractions we mentioned above, you would know:

100% of 1600 is 1600 and **12.5% is ⅛** meaning:

(1600 - (1600/8)) = 1400.

Want to Learn More Percentage Concepts?

To learn more in-depth percentage concepts and get access to multiple mock tests, trial lessons, and additional concept classes, sign up for our Quantitative Banking Course.

This course comes with 299+ lessons, 89 tests, 32 trial lessons, and other supplementary material necessary to ace your Quant exam (all topics included).

Conclusion

By understanding the fundamental concepts mentioned in this article, you can attempt percentage-related questions more confidently and quickly. However, make sure to practice regularly and avoid cramming.

FAQs

1. **What is the best way to master the concept of percentage?**

The best and only way to master percentage concepts is by practicing. You need to solve as many questions as you can in a time-bound manner to understand concepts of percentage and every other Quants topic.

2. **Can I get access to more percentage PYQs?**

Yes, we have created a dedicated article on percentage PYQs with answers and detailed explanations. Here's the link: RBI Grade B Percentage PYQs with Explanation.

3. **Is percentage an important topic for the RBI Grade B Quant section?**

Yes, percentage is a crucial topic for the RBI Grade B Quant section. by understanding the fundamental concepts of percentage, you can simplify several topics such as simple interest, profit and loss, compound interest, and data interpretation.