



The **Staff Selection Commission Combined Graduate Level (SSC CGL)** Ratio and Proportion topic is a crucial pillar of the Quantitative Aptitude section and appears regularly in both Tier 1 and Tier 2 of the examination. With its strong presence and wide applicability, this chapter plays a key role in evaluating a candidate's numerical reasoning and problem-solving skills. Beyond its standalone importance, SSC CGL Ratio and Proportion also serve as a foundational concept in various other arithmetic topics such as Percentages, Profit and Loss, Ages, Partnership, Mixtures, and especially Data Interpretation, where understanding ratios is critical for quick analysis and decision-making.

What makes Ratio and Proportion for **SSC CGL** especially valuable is its simplicity combined with versatility. The questions are often formula-based, yet they test your understanding of proportional relationships and ability to apply logic under time pressure. Whether you're just starting your preparation or are a seasoned aspirant aiming for top ranks, mastering this topic can significantly boost your accuracy and help you save time across multiple question types. With regular practice and conceptual clarity, Ratio and Proportion can easily become one of the most scoring chapters in your SSC CGL 2025 preparation journey.

SSC CGL Ratio and Proportion - What is Ratio and Proportion?

In simple terms, a ratio is a mathematical way of comparing two quantities of the same type by showing how many times one value contains or is contained within the other. For example, if Student A scores 80 marks and Student B scores 100, the ratio of their scores is 80:100, which simplifies to 4:5. A proportion, on the other hand, is a statement that two ratios are equal. So, if one ratio is 2:3 and another is 4:6, they form a proportion since both reduce to the same value. This concept of comparing and balancing quantities is the core of many real-life and exam-based applications.

In the context of SSC CGL Ratio and Proportion, this topic tests your ability to analyze and manipulate relationships between numerical values. It includes practical scenarios such as dividing a sum of money among people in a given ratio, determining the mean or third proportional of two numbers, or comparing different sets of data using ratio-based logic. These questions may appear directly or be embedded within broader arithmetic or Data Interpretation problems, making it essential to have a strong grasp of this topic. Mastery of Ratio and Proportion in SSC CGL not only helps solve standalone questions but also enhances your performance in related issues, such as ages, partnerships, mixtures, and more.

SSC CGL Ratio and Proportion - Importance

The SSC CGL Ratio and Proportion section holds considerable importance in the Quantitative Aptitude syllabus, consistently appearing with a weightage of 1–2 direct questions in Tier 1, and even more prominently in Tier 2, especially within Data Interpretation (DI) sets. While the number of standalone questions may seem limited, the real impact of this chapter lies in how extensively it is integrated into various other arithmetic topics. Whether it's in pie chart comparisons, profit-loss-based data tables, or numerical reasoning within DI sets, understanding ratios and proportions is key to unlocking quick and accurate solutions.



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These questions are typically moderate in difficulty, but what makes them challenging is the precision they demand; answer options are often close, and even a small miscalculation can lead to an incorrect choice. Moreover, Ratio and Proportion in SSC CGL extends beyond textbook definitions and finds real-world application in problems such as profit sharing, mixing of solutions, age comparison, income-expenditure analysis, and partnership-based divisions. According to past year trends, while earlier exams featured more straightforward ratio problems, recent papers have seen a gradual increase in complexity and logic-based variations, raising the overall difficulty to moderate-to-high. This makes mastering this topic not just beneficial but essential for securing higher marks in SSC CGL 2025.



[Source: Quant Sir]

SSC CGL Ratio and Proportion - Formulae to Remember

To excel in the SSC CGL Ratio and Proportion section, memorizing key formulas is essential. These formulas not only help solve direct ratio problems but are also crucial for related topics such as partnership, mixture and alligation, time and work, and data interpretation. With time being a critical factor in the SSC CGL exam, knowing these formulas allows candidates to solve questions quickly and accurately, often without requiring lengthy calculations.

Below are the most important SSC CGL Ratio and Proportion formulas that every aspirant must commit to memory:

Basic Ratio Formula



If the ratio of two numbers is $a:b$, then:

- First number = $[a/(a + b)] \times \text{Total}$
- Second number = $[b/(a + b)] \times \text{Total}$

This is frequently used to divide a quantity in a given ratio.

Cross Multiplication Rule for Proportion

If $a : b = c : d$, then:

$$a \times d = b \times c$$

This is the most fundamental property of proportion and is often used to solve equation-based problems.

Mean Proportional

If a and b are two numbers, then:

$$\text{Mean Proportional} = \sqrt{ab}$$

Useful in geometry-based applications and simplification of ratios.

Third Proportional

If $a : b = b : x$, then:

$$x = b^2/a$$

This is a common question format in SSC CGL Ratio and Proportion sets, especially in Tier 2.

Duplicate and Triplicate Ratios

- Duplicate of $a : b = a^2 : b^2$
- Triplicate of $a : b = a^3 : b^3$

These ratios are tested through shortcut problems or verbal-type MCQs.

Componendo and Dividendo Rule

If $a/b = c/d$, then:



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- Componendo: $(a + b)/b = (c + d)/d$
- Dividendo: $(a - b)/b = (c - d)/d$
- Componendo and Dividendo: $(a + b)/(a - b) = (c + d)/(c - d)$

This is a powerful shortcut used to simplify complex ratios and solve proportion-based questions in seconds.

Inverse Ratio

If a ratio is $a:b$, then the inverse ratio is $1/a:1/b$ or simply $b : a$.

Often used in time and work problems or inverse variation cases.

By regularly revising and applying these formulas, you can strengthen your foundation in the SSC CGL Ratio and Proportion chapter and solve a wide range of questions efficiently during the exam. Keep a formula sheet handy for quick last-minute revision, and incorporate these into your daily mock test practice to improve both speed and accuracy.

SSC CGL Ratio and Proportion - Previous Years Trends

Over the past few years, the SSC CGL Ratio and Proportion topic has consistently appeared in both Tier 1 and Tier 2 exams. In Tier 1, candidates typically face 1–2 direct questions involving basic concepts such as dividing quantities in a given ratio, mean and third proportion, or proportional relationships. These are usually straightforward and formula-based, offering a great opportunity to score quick marks with minimal calculation.

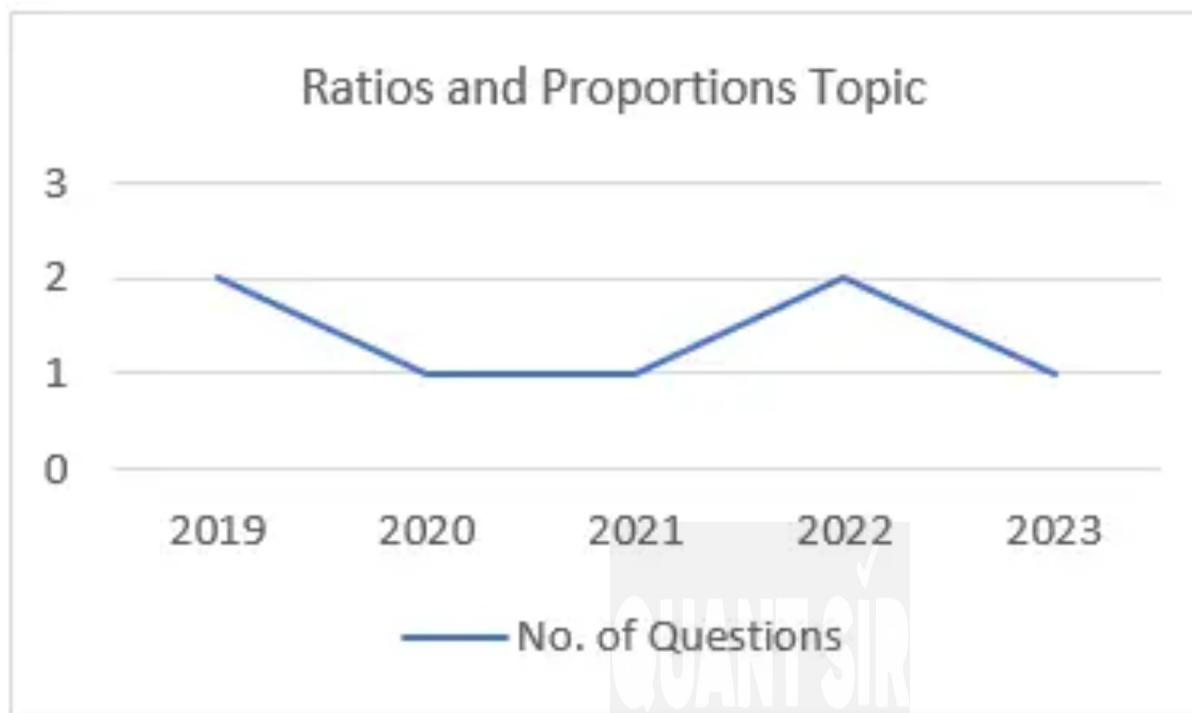
In Tier 2, however, the relevance of Ratio and Proportion in SSC CGL becomes even more significant, especially within Data Interpretation sets. Candidates are often required to use ratios to compare datasets, calculate growth, or analyze category-wise distribution. From 2019 to 2023, the topic has shown a stable presence with increasing complexity, often appearing in disguised formats like age problems, partnership, and mixture questions. This trend highlights the need for deep conceptual understanding and regular practice to confidently tackle both direct and embedded Ratio and Proportion questions in SSC CGL 2025.

Attached below is the graph of the number of questions that appeared in the SSC CGL Ratio and Proportion for last 5 years.



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Ratios and Proportions Topic



[Source: Quant Sir]

SSC CGL Ratio and Proportion - Core Concepts and Subtopics

To excel in the SSC CGL Ratio and Proportion, here are the key subtopics and concepts to focus on:

- **Basic Ratio Concepts:** Antecedent, Consequent, Equivalent Ratios
- **Proportionality Rules:** Invertendo, Alternendo, Componendo, Dividendo, and Componendo-Dividendo
- **Dividing a Quantity in a Given Ratio**
- **Duplicate, Triplicate, Sub-duplicate, Sub-triplicate Ratios**
- **Mean and Third Proportional**
- **Age-Based Problems**
- **Partnership Applications**
- **Comparing Ratios and Fractions**
- **Variations – Direct, Inverse, Joint**

SSC CGL Ratio and Proportion - Example Questions



Q: The ratio of the monthly salaries of Anil and Kumud is 19 : 17. If both receive hikes of ₹2000 and ₹1000, respectively, the new ratio becomes 8 : 7. What is Kumud's current salary?

Sol: Let Anil = 19x, Kumud = 17x

$$(19x + 2000)/(17x + 1000) = 8/7$$

$$\Rightarrow x = 2000$$

$$\Rightarrow \text{Kumud} = 17 \times 2000 = ₹34,000$$

Q. Three partners X, Y, and Z started their business by investing Rs 40,000, Rs 38,000 and Rs 30,000, respectively. After 6 months, X and Z made additional investments of Rs 20,000 and Rs 15,000 respectively, whereas Y withdrew Rs 8,000. Find the share of Y (in Rs) in the total profit of Rs 38,880 made at the end of the year. [SSC CGL 2021]

Sol: Profit = Amount of investment × Time of investment

$$\text{Investment at the end of year X} = 40000 \times 6 + 60000 \times 6 = 240000 + 360000 = 600000$$

$$\text{Investment at the end of year Y} = 38000 \times 6 + 30000 \times 6 = 228000 + 180000 = 408000$$

$$\text{Investment at the end of year Z} = 30000 \times 6 + 45000 \times 6 = 180000 + 270000 = 450000$$

$$\text{Ratio of profit share ratio} = 600000 : 408000 : 450000 = 100 : 68 : 75$$

$$\text{Share of Y} = 38880 \times \frac{68}{243} = 10880 \text{ (Ans.)}$$

SSC CGL Ratio and Proportion - Tips to Score High

To maximize your score in the SSC CGL Ratio and Proportion section, these are the tips you can follow to go beyond formulas and focus on practical strategies that enhance speed, accuracy, and conceptual clarity during the exam:

- **Conceptual Clarity is Key:** Understand the why behind every formula, not just the what.
- **Revise Proportionality Theorems:** They are often used in combination-based questions.
- **Practice SSC CGL Previous Year Questions:** This helps understand question types and difficulty levels.
- **Time-Bound Practice:** Solve 20 questions in under 20 minutes regularly to boost speed.
- **Keep a Quick Revision Sheet:** Maintain a list of all the core formulas and ratio properties, and practice **previous year** questions.

The SSC CGL Ratio and Proportion chapter is not just a scoring opportunity; it also builds the foundation for several allied topics. With a smart strategy, consistent revision, and problem-solving speed, you can easily target full marks from this topic. At **Quant Sir**, we support your preparation journey through concept-rich video lessons, ratio-based mock tests, and doubt-clearing sessions. Whether it's Tier 1 basics or Tier 2 applications, Quant Sir is your go-to platform to master SSC CGL Ratio and Proportion and unlock your dream government job. For more info related to SSC CGL Ratio and Proportion sample questions, syllabus, and many more, stay tuned to our next blog.