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The **Staff Selection Commission Combined Graduate Level (SSC CGL)** exam is one of the most prestigious government job examinations in India, drawing lakhs of candidates annually. With a multi-tiered format and a competitive selection process, the Quantitative Aptitude section plays a crucial role in determining a candidate's success in both Tier 1 and Tier 2. Within this section, SSC CGL LCM and HCF stand out as essential topics that form the basis of various arithmetic and algebraic applications.

Although considered elementary, SSC CGL LCM and HCF questions are often designed to assess your conceptual clarity, logical reasoning, and speed. These topics are not only asked directly but are also embedded within word problems, number system questions, and simplification-based challenges. A strong grip on LCM (Least Common Multiple) and HCF (Highest Common Factor) significantly boosts your accuracy and enhances your problem-solving efficiency across related chapters.

In this article, we'll dive deep into the LCM and HCF concepts for SSC CGL 2025, including key subtopics, shortcut techniques, important formulas, solved examples, and previous year trends to help you master this high-scoring area of the Quant section.



[Source: Quant Sir]

SSC CGL LCM and HCF - Introduction and Basics of LCM

In the context of SSC CGL LCM and HCF, the Least Common Multiple (LCM) refers to the smallest positive number that is exactly divisible by two or more given numbers. It is a vital concept used frequently in various arithmetic problems that appear in both Tier 1 and Tier 2 of the SSC CGL exam.

Understanding how to calculate and apply LCM efficiently can save time and increase accuracy, especially in problems involving repetitive actions or synchronization. Some of the most common scenarios where LCM is used in SSC CGL LCM and HCF-based questions include:



- Synchronization problems (e.g., multiple bells ringing together at regular intervals)
- Time and work problems (e.g., workers repeating tasks at fixed cycles or machines operating on different time frames)
- Fraction simplification and operations (finding the LCM of denominators to add/subtract fractions)

In SSC exams, LCM questions often appear in word problems where finding a common event time, schedule overlap, or minimum value is required. Therefore, mastering LCM techniques such as prime factorization or the division method is essential for solving these quickly and accurately.

SSC CGL LCM and HCF - Introduction and Basics of HCF

In SSC CGL LCM and HCF preparation, the Highest Common Factor (HCF) is another fundamental concept that refers to the greatest number that can divide two or more numbers without leaving a remainder. HCF is particularly useful in questions involving maximization or grouping logic, and is tested regularly in both basic and complex word problems in the exam.

HCF has widespread use in various SSC CGL Quantitative Aptitude questions, including:

- Simplifying ratios or converting them to the lowest terms
- Solving divisibility-based problems involving two or more numbers
- Word problems based on maximum groupings or distribution (e.g., dividing items into the largest possible equal groups without remainder)

Mastering HCF in the context of SSC CGL LCM and HCF allows candidates to easily handle questions where maximum efficiency, simplification, or arrangement is required. It's especially effective when paired with LCM in problems that require combined application of both, such as finding numbers given HCF and LCM, or dealing with problems related to remainder logic.

SSC CGL LCM and HCF - Important Formulae

The relationship between the Least Common Multiple (LCM) and Highest Common Factor (HCF) is fundamental in number theory, and there are specific formulas and methods to efficiently calculate these values for both whole numbers and fractions:



- **LCM × HCF** = Product of the Numbers (valid for two numbers only)
- **LCM of Fractions** = LCM of numerators / HCF of denominators
- **HCF of Fractions** = HCF of numerators / LCM of denominators
- **For numbers a and b, LCM (a, b) = (a × b) / HCF (a, b)**
- **To find HCF or LCM quickly**, always use prime factorization or the division method

SSC CGL LCM and HCF - Key Subtopics

To effectively master the SSC CGL LCM and HCF chapter, aspirants must develop conceptual clarity in a variety of subtopics:

Prime Factorization Method

This is the most reliable and widely used technique to find both LCM and HCF. Candidates must learn to break down numbers into their prime factors (e.g. $36 = 2^2 \times 3^2$) and then apply:

- LCM = Highest power of each prime factor
- HCF = Lowest power of each common prime factor
- In SSC CGL LCM and HCF questions, prime factorization saves time and reduces calculation errors, especially when dealing with larger numbers or fractions.

HCF and LCM of Fractions

Many questions, particularly in Tier 2, involve finding the LCM or HCF of fractional numbers.

- LCM of fractions = LCM of numerators / HCF of denominators
- HCF of fractions = HCF of numerators / LCM of denominators

Word Problems Involving LCM and HCF

These are among the most frequent question types in the SSC CGL LCM and HCF sections. Examples include:

- Finding the minimum time when two or more events (like bells, buses, or machines) coincide again is solved using the LCM
- Dividing things into the largest possible equal parts, solved using HCF

LCM and HCF of More Than Two Numbers

While many candidates are comfortable with two-number problems, SSC CGL often includes questions involving three or more numbers. For example:



- Finding the smallest number divisible by three different numbers
- Finding the largest number that divides several numbers exactly

Common Multiple and Common Factor-Based Problems

In addition to calculating exact LCM or HCF, SSC may also ask concept-based questions like:

- Which of the following is not a common multiple of two numbers?
- What is the smallest common factor greater than 1?

SSC CGL LCM and HCF - Final Preparation Tips

Mastering the concepts of LCM (Least Common Multiple) and HCF (Highest Common Factor) is crucial for tackling questions effectively in the SSC CGL exam. To boost your preparation, consider implementing the following strategies:

- **Focus on Mastering Prime Factorization and Common Multiple Techniques:** Prime factorization plays a key role in solving LCM and HCF problems. Understanding how to break numbers down into their prime factors will help you quickly identify the LCM or HCF. Additionally, becoming familiar with the common multiple techniques, such as the division method or using the formula for LCM and HCF will save valuable time during the exam.
- **Solve 10–15 Questions Daily with a Mix of Word Problems and Direct Formula-based Sums:** Regular practice is essential to build confidence and speed. Solving a variety of questions, including both word problems and direct sums, will help you apply the concepts in different contexts and improve your problem-solving skills.
- **Revisit Formulas Weekly through a Handwritten Revision Sheet:** Writing down key formulas and revising them weekly helps reinforce understanding and ensures quick recall during exams. This active revision technique strengthens memory retention and allows you to recall formulas with ease under pressure.
- **Take Topic-wise Mock Tests Available on QuantSir to Test Application Under Exam Pressure:** Mock tests help simulate the actual exam environment, testing both your knowledge and time management skills. Topic-wise mock tests on platforms like Quant Sir allow you to assess your readiness and improve problem-solving under timed conditions.
- **Review Previous Year Questions (PYQs) to Identify Repeating Question Types and Shortcuts:** Reviewing PYQs helps identify recurring question patterns and frequently asked topics. Recognizing these patterns allows you to apply time-saving shortcuts, enhancing your ability to solve similar questions quickly and accurately on exam day.

The SSC CGL LCM and HCF topic is a fundamental part of the Quantitative Aptitude section and plays a key role in enhancing your overall problem-solving abilities across chapters like fractions, time and work, ratios, and even number system-based questions. With a strong grasp of LCM and HCF concepts, consistent practice, and a clear understanding of their real-world applications, this topic can become one of your most reliable scoring areas in both Tier 1 and Tier 2 of the **SSC CGL 2025** exam.



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At **Quant Sir**, we are dedicated to supporting your preparation journey with high-quality resources tailored to SSC CGL success. From expert-led concept videos and chapter-wise practice quizzes to full-length mock tests, eBooks, and personalized doubt resolution, Quant Sir offers everything you need to confidently master LCM and HCF for SSC CGL. Whether you're just beginning your prep or revisiting essential arithmetic topics, our structured tools are designed to help you build speed, accuracy, and confidence.

In our next blog, we will dive into the critical concepts of LCM and HCF, unraveling their importance and providing effective strategies to tackle related problems with confidence. Stay tuned for expert insights and tips!

