Frequently Asked Questions

1. What is the problem in choosing formulae for constructing an index number?
   Answer: The choice of a formula for the construction of index number is a two sided problem. It involves the choice of a method of averaging as well as the choice about the system of weighting. Several formulae have been suggested for constructing index numbers and the problem is that of selecting the most appropriate one in a given situation.

2. What are the tests suggested for choosing an appropriate index number?
   Answer: Unit test, time reversal test, factor reversal test and circular test are tests suggested for choosing an appropriate index.

3. What is a unit test?
   Answer: Unit Test: It requires that the formula should be independent of the units in which or for which prices and quantities are quoted. This test is satisfied by all index number methods except the simple (unweighted) aggregative index method.

4. What is time reversal test?
   Answer: A test that may be used under the axiomatic approach which requires that if the prices and quantities in the two periods being compared are interchanged the resulting price index is the reciprocal of the original price index.

5. What is a factor reversal test?
   Answer: The factor reversal test requires that multiplying a price index and a volume index of the same type should be equal to the proportionate change in the current values. Suppose the roles of the prices and quantities in a price index are reversed to yield a quantity index of exactly the same functional form as the price index.

6. What is a circular test?
   Answer: It is concerned with the measurement of price changes over a period of years, when it is desirable to shift the base.

7. Which methods do not satisfy the time reversal test?
   Answer: the Laspeyer's method and the Paasche's method do not satisfy the time reversal test.

8. Which methods satisfy the time reversal test?
   Answer: Fisher's ideal index number, Simple geometric men of price relative, Aggregates with fixed weights, the weighted geometric mean of price relatives if we use fixed weights Marshall-Edgeworth method.

9. Which methods satisfy the factor reversal test?
   Answer: The Fisher's index number satisfies the factor reversal test.

10. Which methods do not satisfy the factor reversal test?
    Answer: None of the simple or weighted forms of elementary indices- arithmetic mean, harmonic mean, geometric mean fulfill the requirement of factor reversal test.

11. Which methods satisfy the circular test?

Answer: The simple aggregative method and the fixed weighted aggregative method satisfy the test.

12. Which methods do not satisfy the circular test?

Answer: The Laspeyer's method, Paasche's method and Fisher's method do not satisfy the circular test

13. What is the advantage of circular test?

Answer: The advantage of this test is that it reduces the computation every time a change in the base year has to be made. Index number can be adjusted from year to year without referring each time to the original base.

14. What is the disadvantage of circular test?

Answer: The disadvantage is that weights in the index numbers depend on the periods between which comparisons are being made, if these periods change, the weights change.

15. How will we know that the index number have satisfies the time reversal test, factor reversal test and the circular test?

Answer: Any index number when fulfills the following conditions is said to have satisfied the test:

Time reversal test: $P_{01}XP_{10} = 1$
Factor reversal test: $P_{01}Xq_{01} = \Sigma P_1 q_1 / \Sigma P_0 q_0$
Circular test: $P_{01} x P_{12} x P_{20} = 1$