

**Indian Statistical Institute, Bangalore Centre**

B.Math (Hons.) I Year, First Semester

Semestral Examination

Writing of Mathematics

Time: 3 Hours

November 26, 2012

Instructor: N.S.N. Sastry

Total Marks : 100

Write complete proof of the following statement :

1. There are an infinite number of prime integers.
2. There is a bijection between the set of prime natural numbers and positive rational numbers.
3. Between any two rational numbers, there is another rational number.