JF-101

January-2021

B.Sc., Sem.-III

202 : Statistics

(Mathematical Economics & Actuarial Science – I)

(Old Course)

Time : 2 Hours]   **[Max. Marks : 50**

Section – A

Attempt any **three** :

1. (a) What is Index Number ? Give its uses and limitations.   7

    (b) Explain the term "selection of base year" and "selection of weights" in construction of index number.   7

2. (a) Explain fixed base index numbers and chain base index numbers for the construction of index number. Also give its merit and demerits.   7

    (b) Explain time reversal tests and factor reversal tests.   7

3. (a) What is Fisher's Index Number ? Why it is called ideal index number ?   7

    (b) What is cost of living index number ? Give importance of family budget method for constructing cost of living index number.   7

4. (a) What is demographic statistics ? Explain briefly methods for collecting it.   7

    (b) Give the meaning of crude and standardized death rates. How are they used in comparing the standards of health in two cities ?   7

5. (a) Explain the term :   7
      (i) General Fertility Rate
      (ii) Specific Fertility Rate
      (iii) Total Fertility Rate

    (b) Give the meaning of vital statistics and explain utility and defects of vital statistics.   7

6. (a) Write a brief note on life table.   7

    (b) Write a note on force of mortality.   7

7. (a) Explain Lorentz curve mathematically and its deviation for some well known income distribution function. **7**

    (b) Write a note on Income Distribution function. **7**

8. (a) Explain : **7**
    (i)   Curate expectation of life
    (ii) Stationary population
    (iii) Force of mortality

    (b) Explain central mortality rate. **7**

Section – B

9   Attempt any **eight** : **8**

    (1) Which index number is considered to be ideal index number ?

    (2) Which averages used for construction of index number is generally considered to be ideal ?

    (3) In which of the index numbers only the quantities of the base year are taken into account for its construction ?

    (4) Which index number satisfies time reversal test ?

    (5) Which index number satisfies factor reversal test ?

    (6) Give the formula of converting chain base index numbers into fixed base index number.

    (7) If the price index number for the current year in relation to the base year is 125, then the purchasing power of money for the current year is _____.

    (8) The full form of CBR is _____ and IMR is _____.

    (9) The full form of SDR is _____ and TFR is _____.

    (10) Demography is derived from the _____ word demos.

    (11) $T_x = \dfrac{1}{2} lx +$ _____

    (12) $e_x = \dfrac{?}{I_x}$

    (13) $^nq_x = \dfrac{?}{I_x}$

    (14) $I_{x+n} = I_x \cdot$ _____

    (15) $m_x = \dfrac{dx}{?}$

_____