

2018

CBCS

3rd Semester

STATISTICS

PAPER—C6T

(Honours)

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Demography and Vital Statistics

1. Answer any five questions :

5×2

(a) Define a life table.

(b) Give two sources of data on vital events.

(c) What is meant by saying that the NRR of a country is 1.129 ?

(d) Define complete expectation of life.

(e) Show that $q_x \approx \frac{2m_x}{2+m_x}$ where the symbols have their usual meanings.

- (f) Indicate the types of errors that are usually found to occur in census data on age.
- (g) Define two measures of population growth.
- (h) Give two uses of life table.

2. Answer any *four* questions : 4×5

- (a) Distinguish between stable population and stationary population.
- (b) Show that NRR cannot be greater than GRR.
- (c) Define CBR and GFR. Why is GFR considered an improvement on CBR ?
- (d) Derive by starting from a suitable functional form for L_x , the formula $L_x = \frac{l_x + l_{x+1}}{2}$.
- (e) How is infant mortality rate an improvement over the age specific death rate ?
- (f) What is meant by μ_x , the force of mortality at age x ? Can this exceed one.

3. Answer any *one* question : 1×10

- (a) Describe the Rhode's method for fitting a logistic curve to population data.
- (b) Describe the construction of standardised death rate.