

**B.Sc. (Honours) Examination, 2018**  
**Semester-II**  
**Statistics (Allied)**  
**Course : BSA-21 (Old)**  
**(Economic Statistical and Vital Statistics)**

**Time : 3 Hours**

**Full Marks : 40**

Questions are of value as indicated in the margin

Answer **any four** questions

1. Write short notes on the following : 2.5×4=10
    - (a) Infant mortality rate (b) Direct Standardisation method
    - (c) Total fertility rate (d) Vital index
  2. (a) Briefly describe the construction of a life table
  - (b) In usual notation prove that (i)  $\frac{dT_x}{dx} = -l_x$  (ii)  $l_x e_x = \sum_{n=1}^{\infty} l_{x+n}$
  3. (a) Write down the methods for the measurement of trend of a line-series data. 8  
(b) What do you mean by irregular component of a time series data? 2
  4. (a) Suppose we want to fit a polynomial of degree 4 (in the form  $T_t = b_0 + b_1 t^4$ ) to measure the trend of a time-series data. What are the estimates of  $b_0$  and  $b_1$ ? 7
  5. Write short notes on the following : 2.5×4=10
    - (a) Paasche's price index method (b) Fisher's ideal index number
    - (c) Chain indices (d) Marshall-Edgeworth Price index
  6. What are the basic problems involved in the construction of index numbers? Discuss. 10
-