

B.Sc. (Honours) Examination, 2019

Semester-II

Statistics (Allied)

Course : BSA-21 (Old)

Time : 3 Hours

Full Marks : 40

Questions are of value as indicated in the margin

Answer **any four** questions

1. a) Describe the components of a lime series. 5
b) Suppose we want to fit a Polynomial curve of degree 3 (in the form $T_t = a_0 + a_1 t^3$) to measure the trend of a time-series data. What are the estimates of a_0 and a_1 ? 5
 2. a) What are the objectives of time series analysis? 2
b) Write down any two methods for the measurement of seasonal variation. 8
 3. a) Briefly describe the construction of a life table. 5
b) In usual notation prove that
i) $\frac{dT_x}{dx} = -l_x$ ii) $l_x e_x = \sum_{n=1}^{\infty} l_{x+n}$ 5
 4. Write short notes on the following : 2.5×4=10
a) Paasche's price index method
b) Chain indices
c) Fisher's ideal index number
d) Marshall-Edgeworth Price index.
 5. What are the basic problems involved in the construction of index numbers? Discuss. 10
 6. Define GRR and NRR and discuss how good they are as indices of population growth. 10
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