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Register Number:

DATE:17-04-2018 (1PM)

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27**

B.Sc. STATISTICS - VI SEMESTER

SEMESTER EXAMINATION - APRIL 2018

**ST: 6115 – Applied Statistics**

**Time: 2½hrs Max: 70 Marks**

This question paper has **TWO** printed pages and **THREE** parts

**SECTION – A**

**I Answer any FIVE of the following: 5 x 3 = 15**

1. Write a note on national sample survey organization
2. Define: a) Cohort b) Radix c) Life Expectancy
3. What is time series data? State the models used in time series
4. What are index numbers? discuss utility of index numbers
5. Write a note on randomized control studies
6. Define standard score and obtain relationship between raw score and standard score
7. State the laws of supply and demand.

**SECTION – B**

**II Answer any FIVE of the following: 5 x 7 = 35**

1. A) Write a note on income inequality and explain any one method of measuring it. (4)

B) Define morbidity, fecundity and fertility (3)

1. A) Define Standardized Death Rate? Discuss aboutselection criterion of standard population (5)

B) Give the formula for calculating maternal mortality rate (2)

1. A) Write down the formula for paasche’s quantity index number (2)

B) Show that Marshal Edgeworth price index number satisfies time reversal test (5)

1. A) Explain the method of moving average. Write the merits and demerits (4)

B) Explain following components of time series with examples (3)

* 1. Secular trend ii) Cyclical variations

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1. A) Define T-score and outline the procedure for calculating T-score (5)

B) Define reliability and validity (2)

1. A) Explain construction of receiver operating characteristic(ROC) curve? (4)

B) Differentiate between Sensitivity and Specificity. (3)

1. Derive the demand function with constant price elasticity (7)

**SECTION – C**

**III Answer any TWO of the following: 2 x 10 = 20**

1. A) Define central mortality rate and derive the relation between central mortality rate and force of mortality. (6)

B) What is odds ratio? Obtain 95% confidence interval for the same (4)

1. A) Define consumer price index number and explain the family budget method for construction of consumer price index (4)

B) Write a note on fisher’s index number (4)

C) Define intelligent quotient (2)

1. A) Describe ratio to moving average method of estimating seasonal indices (6)

B) Write a note on Engel’s law and Engels curve (4)

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