

B.N. Bandodkar College of Science, Thane  
F.Y. B.Sc. Second Semester end Examination  
Code : USST201 March 2014

Duration 2 hrs

Max Marks-60

- N.B. 1) All Questions are compulsory.  
2) Figures to right indicate marks.

- Q1) a) Attempt any TWO
- 1) Define Mean deviation and its coefficient. State its merits and demerits. Also explain how it is better than range and Quartile deviation. 7
  - 2) Define raw moments about origin zero and central moments of a distribution and obtain the relations between them. 7
- b) Attempt any ONE
- 1) Define standard deviation as a measure and the corresponding relative measure of dispersion. Explain the effect of change of origin and scale on standard deviation. 8
  - 2) With example explain Box and Whisker Plot and its significance. 8
- Q 2) a) Attempt any ONE
- 1) Define Spearman's rank correlation coefficient. Show that it is derived from Pearson's correlation coefficient. 7
  - 2) Obtain the equation of regression line of Y on X for the given set of n pairs of observations. 7
- b) Attempt any ONE
- 1) Define regression coefficients state and prove their properties. 8
  - 2) State the properties of correlation coefficient and prove any one. 8
- Q.3) a) Attempt any ONE
- 1) Explain briefly the various methods of calculating composite index numbers. 7
  - 2) Explain various steps in the construction of an Index number 7
- b) Attempt any ONE
- 1) Explain i) Time reversal test ii) Factor reversal test. Which Index Number satisfies these tests? Justify your answer. 8
  - 2) Explain: (i) Splicing on index number series. (ii) Changing the base of Index number by giving suitable example. 8
- Q.4) a) Attempt any ONE
- 1) Explain the Skewness. State various absolute and relative measures of skewness. 8
  - 2) What is meant by curve fitting? How will you fit the  $Y=a +bX+ cX^2$  for the given data? 8

b) Attempt any ONE

- 1) What is dispersion? State various Measures of Dispersion? State essential 7  
requisites of good Measure of Dispersion?
- 2) Define the following price index numbers. (i) Laspeyre's index number. 7  
(ii) Paasche's index number. (iii) Fisher's index number. (iv) Bowley's index  
number (v) Marshall-Edgeworth's index number. Which is better? Why?

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