DON BOSCO ARTS AND SCIENCE COLLEGE
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M 6590

Reg. No. : .....

Name : .....

I Semester B.Sc. Degree Examination, November 2009

STATISTICS (Complementary)

(Course – 1) Basic Statistics (IC 01 STA)

Time : 3 Hours Total Weightage : 30

Instruction : *Use of calculators Statistical tables* ***permitted.***

PART – A

Answer **any 10** questions. **(Weightage 1)**

1. Define sampling and census.
2. Give two examples each for primary and secondary data.
3. Which of the measures of central tendency is a positional average. Give its formula in the case of a continuous data.
4. Give the formula for quartile deviation and explain the notations.
5. In the case of a symmetric distribution give the relationship between mean, median and mode. Draw its graph.
6. Give the relationship between regression coefficient and correlation coefficient. Explain what will be the sign of the correlation coefficient.
7. What is meant by coefficient of determination ? Compare it with correlation coefficient.
8. Drawing the graph explain the three types of Kurtosis.
9. Name and give the formula of any three weighted index number.
10. What are the components of a time series ? Give the additive and multiplicative model.
11. Express $r_{12.3}$ in terms of simple correlation coefficient.

P.T.O.

PART – B

Answer **any 6** questions. **(Weightage 2)**

12. Explain Simple random sampling and systematic sampling.

13. Given AM = 24.6 Mode = 26.1 Find the value of the median and give reason for using the formula.

14. Draw the Lorenz curve and explain its uses.

15. Describe the main steps in the construction of a cost of living index number.

16. The blood pressure of a group of 60 patients had an average of 140 and S.D 10 and Median 141. A second group of 60 have and average of 145 and S.D of 13 and median 141. Compare the two groups and comment.

17. What is the principle of least squares ? Fit a curve of the form $y = \frac{a}{x} + b$?

18. What are the merits and demerits of arithmetic mean with respect to median and mode ?

19. Why is Fisher's index number called the ideal index number.

20. Explain time reversal and factor reversal test. Which index number satisfies both the test ?

PART – C

Answer **any two** questions. **(Weightage 4)**

21. a) What are the different steps to be followed before conducting a sample survey.

    b) Find the mean of X and Y and the correlation coefficient given the following regression equations, $3y - x - 60 = 0$, $4y - 2x = 10$.

22. If a group of 250 items with mean 15.6 and S.D 13.44 are divided into two groups and if one group of 100 items has mean 15 and S.D 3, find the S.D of the second group.

23. a) What are price relatives ? How are they used to find index number ?

    b) Life of two models of refrigerators in a sample survey are given as :

Life in Years :	0 – 2	2 – 4	4 – 6	6 – 8	8 – 10	10 – 12
Model A :	5	16	13	7	5	4
Model B :	2	7	12	19	9	1

    What is the average life of each model ? Which model is more uniform in its life ?

24. Write short notes on the following :

    a) Judgement sampling and mixed sampling

    b) Skewness and Kurtosis and their measures.

    c) Meaning and uses of index numbers.

    d) Principle of least squares used for fitting a 2nd degree parabola.
