Anekant Education Society's
Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati

Autonomous

Course Structure for F. Y. B. B.A.(C.A.). STATISTICS

Semester	Paper Code	Title of Paper	No. of Credits
II		Elements of Statistics	3

SYLLABUS(CBCS) FOR F. Y. B. B.A.(C.A.). STATISTICS
(w.e. from June, 2019)

Academic Year 2019-2020

Class : F.Y. B. B.A.(C.A.) (Semester- II)
Paper Code: 1204
Paper : IV Title of Paper: Elements of Statistics
Credit : 3 credits No. of lectures: 48

A) Learning Objectives:

1 Understand the power of excel spreadsheet in computing summary statistics.

2 Understand the concept of various measures of central tendency and variation and their importance in business.

3 Understand the concept of probability and simulation in business world and decision making

B) Learning Outcome:

The main outcome of this course is to acquaint students with initial description of the data as part of a more extensive statistical analysis by using some elementary statistical methods.

TOPICS/CONTENTS:

Unit 1. Population, Sample and Data Condensation (5)

Definition and scope of statistics, concept of population and sample with Illustration, Raw data, attributes and variables, classification, frequency distribution, Cumulative frequency distribution.

Unit 2. Measures of Central Tendency and Dispersion (13)

Concept of central Tendency, requirements of good measures of central tendency, Arithmetic mean, Median, Mode for grouped and ungrouped data, concept of dispersion, Absolute and relative measure of dispersion, range, variance, standard deviation, coefficient of variation.

Unit 3. Introduction to Statistical Functions Using Excel **(6)**

Concept of population and sample, Qualitative and Quantitative variables, Raw data, Basic Spreadsheet concept, data entry and its summary statistics using excel functions, preparation of grouped and ungrouped frequency distribution using excel, creating bar charts like histogram, multiple bar diagram, subdivided bar diagram and percentage bar diagram, pie chart, frequency curves and ogive curves.

(There will be no theory question on above chapter separate practical exam of 20 marks of one hour should be conducted on it)

Unit 4. Fundamental Principals of Counting **(6)**

Permutations of 'n' dissimilar objects taken 'r' at a time (with or without repetitions). ${}^{n}P_{r} = n! / (n - r)!$ (without proof). Combinations of 'r' objects taken from 'n' objects ${}^{n}C_{r} = n! / (r! (n - r)!)$ (without proof). Simple examples and applications.

Unit 5. Elementary Probability Theory **(8)**

Random experiments, Sample space, Events, algebra of events, Classical definition of probability, addition theorem of probability (without proof), examples and problems.

Unit-6. Univariate Probability Distributions (finite sample space): **(5)**

Definition of discrete random variable, Probability mass function (p.m.f.) and cumulative distribution function (c.d.f.) of a discrete random variable, Properties of c.d.f. (statements only), Probability distribution of function of random variable, Median and Mode of a univariate discrete probability distribution, Illustrative examples.

Unit 7. Simulation Techniques **(5)**

Random Number Techniques, Monte Carlo Simulation examples and problems.

Total Lectures : 48

References:

1) S.C.Gupta - Fundamentals of Statistics - Sultan chand & sons,Delhi.
2) D.N.Elhance - Fundamentals of Statistics – Kitab Mahal ,Allahabad.
3) Montgomery D.C. – Statistical Quality Control – John Wiley and sons.
4) Goon, Gupta and Dasgupta - Fundamentals of Statistics – The world press private Ltd., Kolkata.
5) Hogg R.V. and Craig R.G. – Introduction to Mathematical Statistics Ed 4(1989) – Macmillan Pub. Co. New York.
6) Gupta S.P. – Statistical Methods, Pub – Sultan Chand and sons , New Delhi.