"Education for Knowledge, Science and Culture"

-Shikshanmaharshi Dr.Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR

Department of Statistics

B. Com. II

Semester III & IV

CBCS syllabus to be implemented from June 2019 Onwards

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B. Com. II

Semester III and IV, CBCS

Semester	Paper No.	Course Code	Course Title	No. of Credits
III	I	CC - 1051 C	Business Statistics	02
IV	II	CC - 1051 D	Business Statistics	02

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B. Com. Part – II CBCS Syllabus with effect from June, 2019

STATISTICS: CC - 1051 C

Semester: III Business Statistics -Paper- I

Theory: 30 Hours (Marks-50)

Course Outcomes: At the end of this course students will be able to:

CO1: Know Applications Statistics in various fields.
CO2: Classify data and representing it graphically.
CO3: Understand concept of population, sample and different methods of sampling.
CO4: Acquaint with statistical methods viz. Measures of Central Tendency and Dispersion.
CO5: Understand the concept of bivariate data.
CO6: Analyze data by using correlation and regression.

Unit	Contents	Hours Allotted
1	A] **Introduction to Statistics:** 1.1 Meaning of the word Statistics. 1.2 Scope of Statistics: In Industry, Economics, and Management 1.3 Meaning of primary and secondary data 1.4 Qualitative and Quantitative data, Discrete and Continuous variables, Frequency and Frequency Distribution, Graphical representation of data: Frequency polygon frequency curve, Histogram, ogive curves. 1.5 Illustrative Examples. **B] Sampling Techniques:** 1.6 Need and meaning, Definitions of Population, Sample, Sampling 1.7 Advantages of Sampling over Census method 1.8 Methods of Sampling, Simple random sampling with and without replacement, Stratified random sampling (only concept and real life examples)	**08**
2	**Measures of Central Tendency (Averages):** 2.1 Concept of Central Tendency 2.2 Requirements of good statistical average 2.3 Arithmetic Mean: Definition, Properties of A.M. (without proof), Combined mean. 2.4 Positional Averages: Median and Mode, Determination of mode and median by graph., Partition values(Quartiles and Deciles) 2.5 Empirical relation between Mean, Median and Mode 2.6 Merits and Demerits of Mean, Median and Mode.	**08**

	2.7 Numerical examples.	
3	**Measures of Dispersion:** 3.1 Concept of Dispersion, Requirements of good measures of dispersion. 3.2 Absolute and Relative measures of dispersion. 3.3 Range- Definition, Coefficient of Range. 3.4 Quartile Deviation (Q.D.) Definition, Coefficient of Q.D. 3.5 Mean Deviation (M.D.): Definition of M.D.(about Mean Median), Coefficient of M.D. 3.6 Standard Deviation (S.D.) and Variance: Definitions, Coefficient of S.D, Combined S.D. for two groups 3.7 Coefficient of Variation(C.V.): Definition and Its Uses 3.8 Merits and Demerits of Q.D., M.D. and S.D 3.9 Numerical Examples.	**06**
4	**Analysis of Bivariate data:** **A] Correlation** 4.1 Concept and Types of correlation, 4.2 Methods of studying correlation, Scatter Diagram, Karl Pearson's correlation coefficient (r), Spearman's rank correlation coefficient(R) 4.3 Computation of r for ungrouped data, Computation of R (with and without tie) 4.4 Interpretation of r = -1, r = 0, r = +1, B] **Regression** 4.5 Concept of regression, 4.6 Lines of regression, Regression Coefficients, 4.7 Relation between correlation coefficient and regression coefficients, Numerical examples on correlation and regression	**08**

Reference Books:-

1) Statistical Methods, by Dr. S. P. Gupta, Sultan Chand and Sons Publication.
2) Introduction to Statistics, by C.B. Gupta.
3) Mathematical Statistics, by H.C. Saxena and J.N. Kapur.
4) Business Statistics, by S.S. Desai.
5) Business Statistics, by G.V. Kumbhojkar.
6) Fundamentals of Statistics, by S.C.Gupta.
7) Business Statistics-SIM- Shivaji University, Kolhapur

Note: Use of non programmable calculator is allowed.

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B. Com. Part – II CBCS Syllabus with effect from June, 2019

STATISTICS: CC - 1051 D

Semester: IV Business Statistics -Paper- II

Theory: 30 Hours (Marks-50)

Course Outcomes: At the end of this course students will be able to:

CO1: Understand the concept of probability and probability distributions.
CO2: Know applications of probability distributions in real life.
CO3: Measure trend and seasonal indices in Time series.
CO4: Compute simple and weighted Index numbers.
CO5: Distinguish between process and product control, plotting control charts for variable and attributes**.**

Unit	Contents	Hours Allotted
1	**Probability and Probability Distributions:** **Probability:** 1.1 Trial, Sample Space, Events, Classical definition of Probability, 1.2 Addition and Multiplication laws of Probability (without proof), 1.3 Examples without use of permutations and computations. **Binomial Distribution:** 1.4 p. m. f., Mean and Variance (without proof), 1.5 Simple examples to find probabilities and parameters. ***Normal Distribution:*** 1.6 p. d. f., Mean and Variance (without proof), 1.7 Definition of Standard Normal Variate and its p.d.f., 1.8 Properties of normal curve, 1.9 Examples to find probabilities for given area under standard normal curve	**08**
2	**Time Series:** 2.1 Definition and Uses of Time Series, Components of time series, 2.2 Methods of determination of trend. Method of Moving Averages, Method of Progressive Averages, Method of Least Squares (only for straight line). Determination of Seasonal Variations by Simple Average Method. 2.3 Numerical examples.	**08**

3	**Index Numbers:** 3.1 Need and meaning of Index Numbers, 3.2 Problems involved in Construction of index numbers 3.3 Price, Quantity and Value based index numbers, 3.4 Simple (unweighted) index numbers, Weighted index numbers, 3.5 Laspeyre's, Paasche's and Fisher's index numbers, 3.6 Numerical examples.	**06**
4	**Statistical Quality Control (S.Q.C.):** 4.1 Concept and need of S.Q.C., 4.2 Advantages of S.Q.C., 4.3 Chance and Assignable causes, Process control and Product control, 4.4 Control Chart and its construction 4.5 Control Charts for variables: Mean and Range Charts, 4.6 Control Charts for Attributes: Control chart for number of defectives (np-chart) for fixed sample size, Control chart for number of defects per unit (C-chart), 4.7 Numerical examples.	**08**

Note:. Use of non programmable calculator is allowed.

Reference Books:-

1) Elements of Statistics by D. N. Elance.
2) Introduction to Statistics, by C.B. Gupta.
3) Mathematical Statistics, by H.C. Saxena and J.N. Kapur.
4) Business Statistics, by S.S. Desai.
5) Business Statistics, by G.V. Kumbhojkar.
6) Fundamentals of Statistics, by S.C.Gupta.
7) Mathematical Statistics, by D.C. Sanchety and V. K. Kapoor.
8) Business Statistics-SIM- Shivaji University, Kolhapur.

Assessment Structure
Structure of Question Paper
Internal Evaluation

Semester	Evaluation	Marks
III	1. Assignment 2. Oral	10
IV	1. Assignment 2. Oral	10

Nature of Question Paper B. Com. Part II

Subject: Business Statistics, Paper- I, Sem- III & Paper- II, Sem-IV

Business Statistics

Total Marks: 40

Instructions: i) All questions carry equal marks.

ii) Attempt any five Questions.

iii) Use of non programmable calculator is allowed.

Q. 1 Two bits of 4 marks each (8)

Q. 2 to Q. 6 One bit of 8 marks in each question (8 x 5)

Q. 7 Two bits of 4 marks each (8)

Note: Any bit of 8 marks will be of following nature

i) Only problem of 8 marks.

ii) Only theory of 8 marks.

iii) Mix question of theory and problem of 8 marks.

VIVEKANAND COLLEGE ESTD JUNE 1964 KOLHAPUR - 416003

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