

**SOLAPUR UNIVERSITY, SOLAPUR**  
**New Syllabus for B.Com. Part-II**  
**Subject Title: BUSINESS STATISTICS**  
**(w. e. f. June 2009)**

<b>SECTION-I</b>		
<b>Unit-1</b>	<p><b>Introduction to Statistics:</b>  Meaning and Scope, Stages of Statistical Investigation, Methods of data collection, Census and Sampling Methods, Advantages of Sampling Method, Concepts of Simple Random Sampling and Stratified Random Sampling.</p> <p><b>Analysis of Uni-variate Data:</b>  Concept of Classification and Tabulation, Construction of frequency distribution, Relative and Cumulative frequency distribution.</p> <p><b>Graphical and Diagrammatic Representation:</b>  Construction of Histogram, Frequency Polygon, Ogive Curves, Pie Chart and Pyramids.</p>	20
<b>Unit-2</b>	<p><b>Measures of Central Tendency:</b>  Concept of Central Tendency and Requirements of Good Measures of Central Tendency. Mean, Median, Mode and their comparison. Quartiles, Properties of Arithmetic Mean (without proof). Numerical examples.</p>	15
<b>Unit-3</b>	<p><b>Measures of Dispersion:</b>  Concept of Dispersion, Requirements of Good Measures of Dispersion, Absolute and Relative Measures of Dispersion. Range, Quartile Deviation, Standard Deviation, Mean Deviation about mean and their relative measures. Variance, Coefficient of Variation, Properties of Standard Deviation (without proof). Numerical examples.</p>	15
<b>Unit-4</b>	<p><b>Correlation and Regression:</b></p> <p><b>Correlation:</b> Concept, Types of Correlation, Scattar diagram, Measures of Correlation: i) Karl Pearson's Correlation Coefficient (Ungrouped data). Interpretation of <math>r = +1</math>, <math>r = -1</math> and <math>r = 0</math>.  ii) Spearman's Rank Correlation Coefficient.</p> <p><b>Regression:</b> Meaning, Linear Regression, Equation of Regression Lines. Least Square Method (Linear Equation). Relation between Correlation coefficient and Regression coefficients. Numerical examples.</p>	10

<b>SECTION-II</b>		
<b>Unit-5</b>	<p><b>Probability and Probability Distributions:</b></p> <p>Sample space, Events, Classical definition of probability, Addition and Multiplication laws of probability (without proof). Examples without use of permutation and combination.</p> <p><b>Binomial Distribution:</b> Probability mass function (p.m.f.); Mean and Variance (without proof), Simple examples to find probabilities and parameters of the distribution.</p> <p><b>Normal Distribution:</b> Probability density function (p.d.f); Mean and Variance (without proof), Definition of Standard Normal Variate and its p.d.f., properties of normal curve, Examples to find probabilities for given area under standard normal curve.</p>	16
<b>Unit-6</b>	<p><b>Statistical Quality Control (SQC):</b></p> <p>Concept and need of SQC, Advantages of SQC, Chance and Assignable Causes, Process control and Product control.</p> <p>i) Control chart for Mean and Range.</p> <p>ii) Control chart for number of defectives (np-chart) for a fixed sample size.</p> <p>iii) Control chart for number of defects per unit (C-chart). Numerical examples.</p>	14
<b>Unit-7</b>	<p><b>Index Numbers:</b></p> <p>Need and Meaning of Index Numbers, Price, Quantity and Value based index numbers, Simple (un-weighted) index numbers, Weighted index numbers, Laspeyre's, Paasche's and Fisher's price and quantity index numbers. Simple examples.</p>	15
<b>Unit-8</b>	<p><b>Time Series:</b></p> <p>Definition, Components of Time Series, Methods for determination of trend:</p> <p>i) Method of Moving Averages</p> <p>ii) Method of Least Squares (only for straight line).</p> <p>iii) Method of Progressive Averages.</p> <p>Determination of Seasonal Variation by Simple Average Method.</p> <p>Numerical examples.</p>	15

**Note:** Use of Calculator is allowed.

**Reference Books:-**

- 1) Statistical Methods, by S. P. Gupta, Sultan Chand and Sons Publisher.
  - 2) Introduction to Statistics, by C. B. Gupta.
  - 3) Mathematical Statistics, by H. C. Saxena and J. N. Kapoor.
  - 4) Business Statistics, by S. S. Desai.
  - 5) Business Statistics, by G. V. Kumbhojkar.
  - 6) Fundamentals of Statistics, by S. C. Gupta.
  - 7) Essential Statistics, by A. B. Rao.
  - 8) Fundamentals of Mathematical Statistics, by S. C. Gupta and V. K. Kapoor.
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## **Distribution of Marks for the University exams for all faculties.**

1.(a) 20% Marks – Objectives questions.

40% Marks – Short notes / Short answer type questions/ Short Mathematical type questions.

40% Marks – Descriptive type questions / Long Mathematical type questions

Out of 20% Marks for objective questions 10% marks Should be assigned to multiple choice questions and remaining 10% be assigned to fill in the blanks / answer in one sentence etc. However, each faculty may decide nature and types of questions to be set subject to distribution of above percentage of marks.

(b) One descriptive type question will be Compulsory Paper setter should mention approximate words limit for short note / short answer type questions except Diagrammatical and Numerical questions.