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| --- | --- | --- |
| **B Com** | **Semester: III** | **Credits: 4** |
| **Course: 3B** | **BUSINESS STATISTICS** | **Hrs/Wk: 5** |

**Learning Outcomes:**

At the end of the course*,* the student will able to:

* Understand the importance of Statistics in real life.
* Formulate complete, concise, and correct mathematical proofs.
* Frame problems using multiple mathematical and statistical tools, measuring relationships by using standard techniques.
* Build and assess data-based models.
* Learn and apply the statistical tools in day life.
* Create quantitative models to solve real world problems in appropriate contexts.

**UNIT I:**

**Introduction to Statistics:** Definition – Importance, Characteristics and Limitations of Statistics - Classification and Tabulation – Frequency Distribution Table -Diagrams and Graphic Presentation of Data (including problems)

**UNIT II:**

**Measures of Central Tendency:** Types of Averages – Qualities of Good Average - Mean, Median, Mode, and Median based Averages-Geometric Mean – Harmonic Mean(including problems)

**UNIT III:**

**Measures of Dispersion:** Meaning and Properties of Dispersion – Absolute and Relative Measures - Types of Dispersion-Range - Quartile Deviation (Semi – Inter Quartile Range) -Mean Deviation - Standard Deviation - Coefficient of Variation. (including problems)

**UNIT IV:**

**Skewness and Kurtosis:** Measures of Skewness: Absolute and Relative Measures- Co-efficient of Skewness: Karl Pearson’s, Bowley’s and Kelly’s - Kurtosis: Meso kurtosis, Platy kurtosis and Leptokurtosis (including problems)

**UNIT V:**

**Measures of Relation:** Meaning and use of Correlation – Types of Correlation - Karlpearson’s Correlation Coefficient - Probable Error-Spearman’s Rank-Correlation (including problems)

**MODEL QUESTION COURSE – THEORY B.Com. DEGREE EXAMINATIONS**

**Semester: III**

**Course(3B): Business Statistics**

Time: 3 Hours. Max Marks: 75

#### Section-A

Answer any **FIVE** of the following questions. **5X5=25M**

1. Classification of Data
2. Harmonic Mean
3. Range
4. Skewness
5. Correlation
6. Probable Error
7. Coefficient of Variation
8. Frequency Distribution

#### Section- B

Answer **FIVE** questions. **5X10=50M**

1. a) Highlight the role and importance of statistics in business decision making in detail.

(OR)

b) Briefly explain the nature and scope of Business Statistics.

1. a) What are the advantages and limitations of measures of central tendency?

(OR)

b) Calculate Mean and Variance of the following Data.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Size | 14 | 16 | 18 | 20 | 22 | 24 | 26 |
| Frequency | 12 | 13 | 14 | 15 | 13 | 12 | 16 |

1. a) Calculate quartile deviation and its coefficient from the following data :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| C.I | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
| F | 5 | 7 | 10 | 5 | 8 |

(OR)

b) Define standard deviation. Briefly explain advantages and limitations of standard deviation.

12.a) Given the following information, find the number of items (n) where rxy = 0.8, x∑y = 2.5,𝜎xy

=60, ∑2 = 90, where x and y are the deviations from the respective means.

(OR)

b) Briefly explain the measures of skewness.

1. a) Calculate the co-efficient of correlation from the following data:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| X | 12 | 9 | 8 | 10 | 11 | 13 | 07 |
| Y | 14 | 8 | 6 | 9 | 11 | 12 | 3 |

Through Karl Pearson’s method.

b) Explain various types of correlation.

(OR)