| Lesson plan of mathematics,session 2020-21  **B.Sc/B.A- 1st sem (Statistics)** |  |
| --- | --- |
| **WEEKS** |  **Chapter**  |  |
| 1 | **Introduction of Statistics:** Origin, development, definition, scope, uses and limitations. **Types of Data:** Qualitative and quantitative data, nominal and ordinal data, crosssectional and time series data, discrete and continuous data, frequency and non-frequency data.  |  |
| 2 | **Collection and Scrutiny of Data:** Collection of primary and secondary data-its majorsources including some government publications, scrutiny of data for internal consistency and detection of errors of recording, classification and tabulation of data |  |
| 3 | **Presentation of Data:** Diagrammatic and graphical presentation of grouped data;Graphing the data constructing histograms, frequency polygon, frequency curve and ogives. **Measures of Central Tendency and Location:** Mean, median, mode, geometric mean,harmonic mean; |  |
| 4 | partition values-quartiles, deciles, percentiles and their graphical location. **Measures of Dispersion:** Absolute and relative measures of range, quartile deviation,Mean deviation, standard deviation ( ), root mean square deviation(s), relation between and s, variance of the combined series, Coefficient of variation.   |  |
| 5 | **Moments, Skewness and Kurtosis:** Moments about mean and about any point andderivation of their relationships, effect of change of origin and scale on moments, Sheppard’s correction for moments (without derivation), Charlier’s checks; concepts of Skewness and Kurtosis and their measures/coefficients including those based on quartiles and moments.  |  |
| 6 | **Theory of Attributes:** Symbolic notation, dichotomy of data, class frequencies, order ofclass frequencies, consistency of data, independence and association of attributes, Yule’s coefficient of association and coefficient of colligation.  |  |
| 7 | Concepts in Probability: Random experiment, trial, sample point, sample space, operation of events, exhaustive, equally likely and independent events; Definition of probabilityclassical |  |
| 8 | relative frequency, statistical and axiomatic approach: Addition and multiplication laws of probability and their extension to n events. Boole’s inequality; Bayes theorem and its applications.  |  |
| 9 |  **Random Variable and Probability Functions:** Definition and properties of randomvariable, discrete and continuous random variable, probability mass and density functions, distribution functions. |  |
| 10 | **Mathematical Expectation:** Definition and its properties-moments, measures oflocation, dispersion, skewness and kurtosis. Addition and multiplication theorem of expectation.  |  |
| 11 | **Generating Functions:** Moments generating function, cumulant generating function |  |
| 12 | probability generating function along with their properties.  |  |