

STATISTICS

NIZAM COLLEGE : DEPARTMENT OF STATISTICS

LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester I)

Class : B. Sc (M.S.CS) I Year

Section:

STATISTICS

Course/Paper: I- (Basic Statistics And Theory of Probability)

Unit I : Descriptive Statistics

No. of Hours Allotted: 16

Topics to be covered	No. of Hours
Concept of primary and secondary data. Methods of collection and editing of Primary data.	1
Designing a questionnaire and schedule. Sources and editing of Secondary Data	1
Measures of Central tendency (Mean, Median and Mode and their simple applications)	2
Geometric Mean and Harmonic Mean and their simple applications	2
Absolute and relative measures of dispersion (range, Quartile deviation, mean deviation and standard deviation) with simple applications	3
Importance of moments, central and non central moments and their interrelationships, Sheppard's corrections for moments for grouped data,	4
Measures of skewness based on Quartiles and moments and kurtosis based on moments with real examples	2
	16

Unit II : Probability

No. of Hours Allotted: 15

Topics to be covered	No. of Hours
Basic Concepts in Probability- deterministic and random experiments	2
Trail, outcome, sample space, event and operations of events, mutually exclusive events and exhaustive events, equally likely and favorable outcomes with examples,	3
Mathematical, Statistical and axiomatic definitions of probability with merits and demerits, Properties of probability based on axiomatic definition	3
Conditional Probability and independence of events	3
Addition and Multiplication Theorems for n events, Boole's inequality and Baye's theorem with examples	4
	15

Unit III: : Random Variables**No. of Hours Allotted: 13**

Topics to be covered	No. of Hours
Definition of random variable, discrete and continuous variables, functions of random variables	2
Probability mass function and Probability Density functions with illustrations	3
Distribution function and its properties	1
Transformation of one dimensional random variable (Simple 1-1 functions only)	3
Notion of bivariate random variable , bivariate distribution and statement of its properties, Joint, marginal and conditional distributions, Independence of random variables	4
	13

Unit IV: : Mathematical Expectation**No. of Hours Allotted: 12**

Topics to be covered	No. of Hours
Mathematical expectation of a function of a random variable	1
Raw and central moments and covariance using mathematical expectation with examples	3
Addition and Multiplication Theorems of Expectations	2
Definition of Moment Generating Function(m.g.f), cumulant Generating Function (c.g.f)	3
Probability Generating Function (p.g.f) and Characteristic Function (c.f) and statement of their properties with applications	3
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NIZAM COLLEGE : DEPARTMENT OF STATISTICS

LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester II)

Class : B. Sc (M.S.CS) I Year

Section:

STATISTICS

Course/Paper: II- (Distribution Theory)

Unit I : Discrete Distribution I

No. of Hours Allotted: 15

Topics to be covered	No. of Hours
Chebychev's and Cauchy-Schwartz's inequalities and their applications	2
Uniform, Bernoulli distributions	1
Binomial distribution	3
Poisson distribution	3
Negative Binomial distribution	4
Geometric distribution	1
Hyper geometric distribution (Mean and Variance only)	1
	15

Unit II: Discrete Distribution II
Allotted: 15

No. of Hours

Topics to be covered	No. of Hours
Properties of the above distributions such as m.g.f, c.g.f, p.g.f, c.f and moments up to fourth order and their real life applications	8
Reproductive property where ever exists	3
Poisson approximation to Binomial distribution	1
Binomial approximations to Hyper Geometric distribution	1
Poisson approximation to Negative Binomial distribution	2
	15

Unit III: : Continuous Distributions I**No. of Hours Allotted: 13**

Topics to be covered	No. of Hours
Rectangular and Normal Distributions	6
Normal distribution as a limiting case of Binomial and Poisson distributions	3
Exponential Distribution	1
Gamma Distribution	1
Beta of two kinds Distributions (mean and variance only)	1
Cauchy Distribution (definition and c.f only)	1

Unit IV: : Continuous Distributions II**No. of Hours Allotted: 12**

Topics to be covered	No. of Hours
Properties of these distributions of unit III such as m.g.f, c.g.f, c.f and moments up to fourth order, and their real life applications	8
Reproductive property wherever exists	2
Statement and applications of Weak law of large numbers	1
central limit theorem for identically independently distributed (iid) random variables with finite variance	1
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LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester III)

Class : B.Sc (M.S.CS)

Section: Statistics

Course/Paper III: Statistical Methods and Theory of Estimation

Unit: I

No. of Hours Allotted: 15

Topics to be covered	No. of Hours
Population correlation coefficient and its properties	1
Bivariate data scattered Diagram	2
sample correlation coefficient, computation of correlation coefficient for grouped data	2
correlation ratio	1
spearman's rank correlation coefficient and its properties	2
Principle of least squares, simple linear regression	2
correlation verses regression, properties of regression coefficients	2
Fitting of quadratic and power curves	3
	15

Unit: II

No. of Hours Allotted: 15

Topics to be covered	No. of Hours
Concepts of partial correlation coefficients(only for three variables)	2
Concepts of multiple correlation coefficients(only for three variables)	3
Analysis of categorical data	2
independence and association, partial association of attributes	2
various measures of association(Yule's) for two way data	2
coefficient of contingency(Pearson and Tcherprow)	2
coefficient of colligation	2
	15

Unit: III**No. of Hours Allotted: 14**

Topics to be covered	No. of Hours
Concepts of population, parameter, random sample, statistic, sampling distribution	1
standard error of sample mean(s) and sample proportion(s)	1
exact sampling distributions-statement and properties of Chi-square	3
t and F Distributions and their inter relationships	2
Independence of sample mean and variance in random sampling from normal distributions	2
Point estimation of a parameter, concept of bias and mean square error of an estimate	1
Criteria of a good estimator .consistency, unbiasedness	1
Efficiency with examples	1
Sufficiency with examples	2

Unit: IV**No. of Hours Allotted: 12**

Topics to be covered	No. of Hours
Statement of Neyman's factorization theorem, derivations of sufficient statistics in case of Binomial, poisson, normal and exponential (one parameter only) distributions	5
Estimation by method of moments	2
Maximum likelihood (ML), statements of asymptotic properties of MLE	3
concept of Interval estimation, confidence intervals of the parameters of the normal population by pivot method	2
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NIZAM COLLEGE : DEPARTMENT OF STATISTICS

LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester III)

Class : B.Sc (M.S.CS)

Section:

Course/Paper: IV Statistical Inference

Unit: I

No. of Hours Allotted: 14

Topics to be covered	No. of Hours
Concepts of statistical hypotheses, null and alternative hypothesis	1
critical region, two types of errors, level of significance and power of a test	3
One tailed and two tailed tests, test function (non randomized and randomized)	4
Neyman-Pearson's fundamental lemma for randomized tests	3
Examples in case of Binomial, Poisson, Exponential and Normal distributions and their powers	3
	14

Unit: II

No. of Hours Allotted: 14

Topics to be covered	No. of Hours
Large sample tests: use of central limit theorem in testing	2
Large sample tests for mean(s)	2
Large sample tests for proportion(s)	2
Large sample tests for standard deviation(s)	2
Large sample tests for correlation coefficient(s)	2
confidence intervals for mean(s), proportion(s), standard deviation(s), and correlation coefficient(s)	4
	14

Unit:III
Allotted: 14

No. of Hours

Topics to be covered	No. of Hours
Tests of significance based on chi square	2
Tests of significance based on t statistic	2
Tests of significance based on F statistic	2
Chi square test for goodness of fit	3
Chi square test for independence of attributes	3
Definition of order statistics and statement of their distribution with simple examples	2
	14

Unit:IV
Allotted: 14

No. of Hours

Topics to be covered	No. of Hours
Nonparametric tests-their advantages and disadvantages, comparison with parametric tests	1
Measurement Scale-nominal, ordinal, interval and ratio	2
One sample runs tests, sign test	2
Wilcoxon-signed rank tests (single and paired samples)	2
Wilcoxon-signed rank test for two independent samples	2
Median test	1
Wilcoxon-Mann-Whitney U test	2
Wald Wolfowitz run test	2
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LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester IV)

Class : B.Sc (M.S.CS)

Section: Statistics

Course/Paper:V (Design of Sample Surveys and Time Series analysis)

Unit: I

No. of Hours Allotted: 11

Topics to be covered	No. of Hours
Concepts of population, sample, sampling unit, parameter, statistic, sample frame and standard error	1
Principal steps in sample surveys - need for sampling, census versus sample surveys	1
sampling and non- sampling errors	1
sources and treatment of non-sampling errors	1
advantages and limitations of sampling	1
Types of sampling: Subjective, probability and mixed sampling methods	1
Methods of drawing random samples with and without replacement	1
Estimates of population mean, total, and proportion, their variance of the estimators by SRSWR	2
Estimates of population mean, total, and proportion, their variance of the estimators by SRSWOR	2
	11

Unit: II**No. of Hours Allotted: 10**

Topics to be covered	No. of Hours
Estimates of population mean, total, and proportion by Stratified random sampling	2
variance of the estimators by Stratified random sampling	3
Stratified random sampling with proportional allocation	3
Stratified random sampling with Optimum allocation	2
	10

Unit: III**No. of Hours Allotted: 11**

Topics to be covered	No. of Hours
Estimates of population mean, total, and proportion and variance of the estimators by Systematic sampling with $N=nk$	4
Comparison of their relative efficiencies.	3
Advantages and disadvantages of the above methods of sampling	4
	11

Unit: IV**No. of Hours Allotted: 10**

Topics to be covered	No. of Hours
Time series and its components with illustrations	1
Additive, multiplicative and mixed time series models	1
Determination of trend by least squares	1
Determination of trend by moving average method.	1
Growth curves and their fitting with reference to Modified exponential curves	2
Growth curves and their fitting with reference to Gompertz curves	2
Growth curves and their fitting with reference to Logistic curves.	2
	10

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NIZAM COLLEGE : DEPARTMENT OF STATISTICS

LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester V)

Class : B.Sc (M.S.CS)

Section: Statistics

Course/Paper: VI (a) (Operations Research, Vital and Indian official statistics)

Unit: I

No. of Hours Allotted: 11

Topics to be covered	No. of Hours
Meaning and scope of OR. Convex sets and their properties. Definition of general LPP	2
Formulation of LPP. Solution of LPP by graphical method	1
Fundamental theorem of LPP. Simplex algorithm	2
Concept of artificial variables. Big -M /Penalty method	2
Two-phase simplex method of solving LPP	2
Concept of degeneracy and resolving it	1
Concept of duality, duality as LPP. Dual Primal relationship	1
	11

Unit: II

No. of Hours Allotted: 10

Topics to be covered	No. of Hours
Definition of transportation problem, TP as a special case of LPP	1
Initial basic feasible solutions by North-West Corner Rule, Matrix minimum methods	1
VAM of obtaining initial basic feasible solution to TP	1
Optimal solution through MODI tableau	2
stepping stone method for balanced and unbalanced transportation problem.	2
Degeneracy in TP and resolving it.	2
Concept of Transshipment problem.	1
	10

Unit: III

No. of Hours Allotted: 11

Topics to be covered	No. of Hours
Formulation and description of Assignment problem and its variations	1
Assignment problem as special case of TP and LPP.	1
Unbalanced assignment problem	2
Traveling salesman problem.	1
Optimal solution using Hungarian method	2
Problem of Sequencing: Optimal sequence of N jobs on two machines without Passing.	2
Problem of Sequencing: Optimal sequence of N jobs on three machines without Passing.	2
	11

Unit: IV

No. of Hours Allotted: 11

Topics to be covered	No. of Hours
Rates and ratios in vital statistics	2
standardized rates	2
construction and uses of complete life tables	2
construction and uses of Abridged life tables	2
Functions and organization of CSO and NSSO	1
Agricultural Statistics, area and yield statistics	1
National Income and its computation, utility and difficulties in estimation of national income.	1
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LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester V)

Class : B.Sc (M.S.CS)

Section: Statistics

Course/Paper: VII (Designs of Experiments and Index Numbers)

Unit: I

No. of Hours Allotted: 11

Topics to be covered	No. of Hours
Concept of Gauss-Mark off linear model with examples, statement of Cochran's theorem Statistical analysis	2
ANOVA – one-way classifications Expectation of various sums of squares,	1
ANOVA – two-way classifications Expectation of various sums of squares,	2
Importance and applications of design of experiments.	2
Principles of experimentation	2
	11

Unit: II

No. of Hours Allotted: 11

Topics to be covered	No. of Hours
Analysis of Completely randomized Design (C.R.D).	2
Analysis of Randomized Block Design (R.B.D)	2
Completely randomized Design (C.R.D)including one and two missing observation	2
Randomized Block Design (R.B.D) including one and two missing observation	2
Expectation of various sum of squares in C.R.D	1
Expectation of various sum of squares in R.B.D	1
Comparison of the efficiencies of above designs.	1
	11

Unit-III**No. of Hours Allotted: 10**

Topics to be covered	No. of Hours
Analysis of Latin Square Design (L.R.D).	2
Analysis of Latin Square Design (L.R.D) with one missing observation estimated	1
Analysis of Latin Square Design (L.R.D) with two missing observations estimated	1
Expectation of various sum of squares.	2
Comparison of the efficiencies	2
Analysis of 2^2 factorial design. Estimates of main effects and interaction effects	1
Yate's table for computation of F.	1
	10

Unit-IV**No. of Hours Allotted: 10**

Topics to be covered	No. of Hours
Concept, construction, uses and limitations of simple and weighted index numbers	2
Laspeyer's, Paasche's and Fisher's index numbers	1
criterion of a good index numbers, Fisher's index as ideal index number	2
problems involved in the construction of index numbers	1
Fixed and chain base index numbers	1
Cost of living index numbers and wholesale price index numbers	1
Base shifting, splicing and deflation of index numbers	2
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LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester IV)

Class : B.Sc (M.S.SC)

Section: Statistics

Course/Paper: VIII (a) Demand Analysis, SQC and Reliability

Unit: I

No. of Hours Allotted: 10

Topics to be covered	No. of Hours
Introduction. Demand and supply	2
price elasticity of supply .	2
price elasticity of demand.	3
Methods of determining demand and supply curves	3
	10

Unit: II

No. of Hours Allotted: 11

Topics to be covered	No. of Hours
Time series data. Leontief's methods of determining demand curve from time series data, limitations of the method.	3
,Pigous's methods of determining demand curve from time series data	2
Pareto law of income distribution curves of concentration	3
Lorenz curve, Gini's coefficient	3
	11

Unit: III

No. of Hours Allotted: 10

Topics to be covered	No. of Hours
Importance of SQC in industry. Statistical basis of Shewart control charts. Interpretation of control charts.. Interpretation of control charts.	2
Construction of control charts for variables (mean, range and standard deviation).	2
Construction of control charts for attributes (p, np, and c- charts with fixed sample sizes)	3
Construction of control charts for attributes (p, np, and c- charts with varying sample sizes)	2
Natural tolerance limits and specification limits, process capability index. Concept of Six sigma and its importance	1
	10

Unit: IV

No. of Hours Allotted: 12

Topics to be covered	No. of Hours
Concept of AQL and LTPD. Producers risk and consumer's risk..	1
Single sampling plan for attributes and their OC and ASN functions	1
Double sampling plans for attributes and their OC and ASN functions	2
Design of single sampling plan for attributes using Binomial and Poisson distributions	2
Design of double sampling plan for attributes using Binomial and Poisson distributions	2
Introduction. Hazard function, Exponential distribution as life model, its memory less property.	1
Introduction. Hazard function, Exponential distribution as life model, its memory less property.	1
Reliability function and its estimation. System reliability - series, parallel systems and their reliabilities.	1
Reliability function and its estimation. System reliability - series k out of N systems and their reliabilities.	1
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NIZAM COLLEGE : DEPARTMENT OF STATISTICS

LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester I)

Class : B.Sc (M.S.SC)

(Practicals)

Section: Statistics

Course/Paper: P-I

No. of Hours Allotted: 24

Topics to be covered	No. of Hours
Basics of Excel- Data entry, editing and saving, establishing and copying formulae, built in functions in Excel, copy and paste and exporting of MS word document.	2
Graphical representation of data(Histogram, Frequency polygon, Ogive curves)	3
Graphical representation of data(Histogram, Frequency polygon, Ogive curves) using MS-Excel	3
Diagrammatic representation of data(Bar and Pie)	2
Diagrammatic representation of data(Bar and Pie) using MS Excel	3
Computation of Central and Non central moments- Sheppard's correction for grouped data	3
Computation of Karl Pearson's and Bowley's Coefficient of Skewness and Kurtosis- β_1 and β_2	4
Computation of Measures of central tendency and dispersion, Coefficients of Skewness and Kurtosis using MS Excel	4
	24

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LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester II)

Class : B.Sc (M.S.SC)

(Practicals)

Section: Statistics

Course/Paper: P-II

No. of Hours Allotted: 24

Topics to be covered	No. of Hours
Fitting of Binomial distribution- Direct method and Recurrence method	3
Fitting of Binomial distribution(Direct method) using MS Excel	2
Fitting of Poisson distribution- Direct method and Recurrence method	3
Fitting of Poisson distribution(Direct method) using MS Excel	1
Fitting of Negative Binomial distribution	2
Fitting of Geometric distribution	1
Fitting of Hyper Geometric distribution	1
Fitting of Normal distribution using Areas method and ordinates method	6
Fitting of Exponential distribution	1
Fitting of Exponential distribution using MS-Excel	1
Fitting of Cauchy distribution	1
Fitting of Cauchy distribution using MS-Excel	1
	24

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LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester III)

Class : B.Sc (M.S.SC)

(Practicals)

Section: Statistics

Course/Paper: P-III

No. of Hours Allotted: 24

Topics to be covered	No. of Hours
Generation of random sample from uniform(0,1), uniform (a,b), exponential, Normal and Poisson distributions	3
Simulation of random samples from Uniform(0,1), Uniform(a,b), Exponential Normal and Poisson distributions using MS- Excel.	2
Fitting of a straight line and parabola, power curves of the type $y=ax^b$ and exponential curves $y=ab^x$ and $y=ae^{bx}$ by method of least squares.	5
Fitting of a straight line and parabola, power curves of the type $y=ax^b$ and exponential curves $y=ab^x$ and $y=ae^{bx}$ by method of least squares using MS-Excel.	3
Computation of Yule's coefficient of association, Pearson's Tcherprows coefficient of contingency	2
Computation of correlation coefficient, forming regression lines for grouped and ungrouped data	2
Computation of correlation coefficient, forming regression lines using MS-Excel	2
Computation of Multiple and partial correlation coefficient	2
Computation of Multiple and partial correlation coefficient using MS-Excel	1
Computation of correlation ratio.	2
	24

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LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester IV)

Class : B.Sc (M.S.SC)

(Practicals)

Section: Statistics

Course/Paper: P-IV

No. of Hours Allotted: 24

Topics to be covered	No. of Hours
Large sample test for mean(s), proportion(s), standard deviation(s) and correlation coefficient.	3
Small sample test for single mean and difference of means and correlation coefficient. Paired t-test	2
Small sample test for single mean and difference of means and correlation coefficient using MS-Excel.	3
Small sample test for single variance and difference of variances	1
Small sample test for single variance and difference of variances using MS-Excel	2
Chi-square test for goodness of fit and independence of attributes	3
Chi-square test for goodness of fit and independence of attributes using MS-Excel	3
Non parametric tests for single and related samples (Sign test and Wilcoxon-signed rank test) and one sample run test.	3
Non parametric tests for two independent samples (Median test, Wilcoxon-Mann-Whitney U test, Wald Wolfowitz run test)	4
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LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester V)

Class : B.Sc (M.S.SC)

(Practicals)

Section: Statistics

Course/Paper: P-V

No. of Hours Allotted: 24

Topics to be covered	No. of Hours
Formulation and graphical Solution of L.P. problem (using different inequality type constraints)	1
Solution of L.P. problem by simplex method, Big-M and two-phase simplex method.	4
IBFS for a transportation problem by North-West corner rule, Matrix minimum method and Vogle's approximation method.	3
Optimum solution to balanced and unbalanced transportation problem by MODI method.	2
Solution of balanced and unbalanced Assignment problem using Hungarian method (Both maximization and minimization type),Solution of Traveling salesman problem.	2
Solution of sequencing problem- Processing of n jobs through two machines and three machines.	1
Computation of various mortality rates, fertility rates and Reproductive rates.	1
Construction of Life tables and Abridged life tables	1
Estimation of Population mean, population total and variance of these estimates by using Simple random sampling with and without replacement. Comparison between SRSWR and SRSWOR.	1
Estimation of Population mean, population total and variance of these estimates by using Stratified random sampling with proportional and optimum allocations. Comparison between proportional and optimum allocations with SRSWOR.	2
Estimation of Population mean, population total and variance of these estimates by using Systematic sampling with $N = nk$. Comparison of Systematic sampling with Stratified and SRSWOR	2
Measurement of trend by method of least squares and moving averages.	2
Determination of seasonal indices by the method of Ratio to moving averages, Ratio to trend and link Relatives.	2
	24

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NIZAM COLLEGE : DEPARTMENT OF STATISTICS

LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester V)

Class : B.Sc (M.S.SC)

(Practicals)

Section: Statistics

Computer Lab

Course/Paper: P-VI

No. of Hours Allotted: 24

Topics to be covered	No. of Hours
Solution of L.P. problem by simplex method using TORA.	3
Solution of L.P. problem by Big-M and two-phase simplex method using TORA.	2
Optimum solution transportation problem using North-West corner rule, Matrix minimum method and Vogle's approximation method for IBFS using TORA.	3
Solution of Assignment problem for both maximization and minimization using TORA.	1
Construction of various rates, life tables and abridged life tables using MS-Excel.	2
Measurement of trend by method of least squares and moving averages using MS-Excel.	1
Determination of seasonal indices by the method of Ratio to moving averages, Ratio to trend and link Relatives using MS-Excel.	1
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NIZAM COLLEGE : DEPARTMENT OF STATISTICS

LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester VI)

Class : B.Sc (M.S.SC)

(Practicals)

Section: Statistics

Course/Paper: P-VII

No. of Hours Allotted: 24

Topics to be covered	No. of Hours
Analysis of Variance one-way with equal number of observations	1
Analysis of Variance two-way with equal number of observations	1
Analysis of CRD, analysis of RBD with and without missing observations	4
Analysis of LSD with and without missing observations	3
Comparison of relative efficiency of CRD with RBD and Comparison of relative efficiency of LSD with RBD and CRD	2
Computation of simple and all weighted indices. Computation of time reversal test	1
Computation of Cost of living index number and whole sale index numbers	1
Computation of fixed base and chain base index numbers, Base shifting, splicing and Deflation	3
Construction of Lorenz curve, Fitting of Pereto's law of an income data.	2
Construction of Mean, range and Standard deviation - charts.	2
Construction of p, np and C charts with fixed and varying n	2
Designing a single and double sampling plans for attributes and construction of its OC and ASN curves	2
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NIZAM COLLEGE : DEPARTMENT OF STATISTICS

LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester VI)

Class : B.Sc (M.S.SC)

(Practicals)

Section: Statistics

Computer Lab

Course/Paper: P-VIII

No. of Hours Allotted: 24

Topics to be covered	No. of Hours
Analysis of Variance one-way with equal number of observations using MS-Excel.	1
Analysis of Variance two-way with equal number of observations using MS-Excel	1
Analysis of CRD, analysis of RBD with and without missing observations using MS-Excel	4
Analysis of LSD with and without missing observations using MS-Excel	3
Computation of all weighted indices, Cost of living index number, Base shifting, splicing and Deflation using MS-Excel.	4
Construction of Lorenz curve using MS-Excel	2
Construction of Mean, range and standard deviation - charts using MS-Excel	3
Construction of p, np and C charts with fixed and varying n using MS-Excel	4
Construction of OC and ASN curves for single and double Sampling plan using MS-Excel.	2
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NIZAM COLLEGE : DEPARTMENT OF STATISTICS

LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester V)

Class : B.Sc (M.S.SC)

Section: Statistics

Course/Paper: P-VI(b) (Econometric Methods)

No. of Hours Allotted: 56

UNIT-I

Topics to be covered	No. of Hours
Nature of Econometrics – Model building – Role of econometrics	16
Multiple regression	16
Polynomial regression, Estimation of the parameter, Structural and reduced forms	24
	56

UNIT-II

Topics to be covered	No. of Hours
The two variable linear model – Least squares estimators	16
Properties of the least squares estimators	16
Inference in the least squares model, the k – variable linear model – Assumptions of the linear model	24
	56

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UNIT-III

Topics to be covered	No. of Hours
Ordinary least squares (OLS) estimators – Properties of OLS estimators	16
Guass – Markov theorem – Inference problems	16
Problems in linear model – Multicollinearity – specification error	24
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UNIT-IV

Topics to be covered	No. of Hours
Autocorrelation – Heteroscedasticity	16
Special models – Dummy variables, Lagged variables	16
Sources of lagged variables – Koyck scheme and Almon lags.	24
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LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester VI)

Class : B.Sc (M.S.SC)

Section: Statistics

Course/Paper: P-VIII(b) (Operations Research)

No. of Hours Allotted: 56

UNIT-I

Topics to be covered	No. of Hours
Game theory – Introduction, Basic terms- Competitive game, zero sum and non zero sum games, strategy, two person zero sum games, pay off matrix	16
The minimax and maximin principle, Games without saddle point- mixed strategies.	24
Graphic solution of $2 \times n$, $m \times 2$ games.	16
	56

UNIT-II

Topics to be covered	No. of Hours
Dominance property- principle of dominance to reduce the size of the game	16
generalized Dominance property, Arithmetic method for $n \times n$ games	24
General solution of rectangular games, game against passivity	16
	56

UNIT-III

Topics to be covered	No. of Hours
Network scheduling by PERT/CPM–	16
Network and basic components, logical sequencing,	16
Rules of network construction, distinction between PERT and CPM.	24
	56

UNIT-IV

Topics to be covered	No. of Hours
Float concept- Total float, Free float, Independent float, Interfering float, Event slacks	16
Time scale representation of floats and slacks.	16
Critical path analysis, Probability considerations in PERT.	24
	56

Name of the Teacher:
Signature:

Head, Department of
Signature:

NIZAM COLLEGE : DEPARTMENT OF STATISTICS

LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester V)

Class : B.Sc (M.S.SC)

(Practicals)

Section: Statistics

Course/Paper: P-VI(b)

No. of Hours

Allotted: 24

Topics to be covered	No. of Hours
Fitting of multiple regression model(3 variables).	3
Computation of R^2	2
Computation of auto correlation function	3
Computation of Multicollinearity	1
Computation of Dummy variable regression	2
Computation of OLS estimators	1
Testing of Heteroscedasticities	1
Computation of Koyck scheme.	24

Name of the Teacher:
Signature:

Head, Department of
Signature:

LESSON PLAN FOR THE ACADEMIC YEAR 2017-2018 (Semester V)

Class : B.Sc (M.S.SC)

(Practicals)

Section: Statistics

Course/Paper: P-VIII(b)

No. of Hours

Allotted: 24

Topics to be covered	No. of Hours
Determining the saddle point by minimax and maximin rules	2
Determining the optimum strategy for the games without saddle point	3
Graphic solution of 2xn and mx2 games	2
Solving games using dominance principles	2
Solving games by LPP	4
Solving games using algebraic method	2
Construction of Network diagrams	3
Construction of floats	2
Finding critical path by CPM	2
Finding critical path by PERT	2
	24

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Signature:

Head, Department of
Signature: