DEPARTMENT OF MATHEMATICS

LESSON PLAN

2019-2020

LESSON PLAN FOR THE

ACADEMIC YEAR

2019-2020

SUBJECTS HANDLED	HOURS
ALGEBRA	6
MATHEMATICAL STATISTICS-I	6
	12

MONTHS	III B.Sc	II B.Sc
JUNE	Basics of Set-theory, Types of mapping, Def Groups	Def of probability, Simple examples, results, definition Basic
	Examples of Groups, Subgroups Left cosets, Rt Cosets, Lagrange theorem, Euler theorem	Independent events, Addition theorem, Conditional probability, multiplication law of probability.
JULY	Fermat theorem, Normal Subgroup Quotient group - theorems	Baye's theorem - Examples Continuous random variable
	Homomorphism, Kernel of homomorphism - lemmas, examples	Probability distribution, Def. of two dimensional Random Variables
	Isomorphism - lemmas, theorems, Automorphism - lemmas	probability density function Marginal and Conditional dist function
	Inner Automorphism - lemmas, Cayley's theorem	Stochastic Independence of variables, one dimension change of variables (transformation)
AUGUST	I C.A EXAMINATION	I C.A EXAMINATION
	Permutation Group, Def of cyclic, Transposition	Mathematical Expectations, properties examples, variance examples
	Alternating groups - theorems examples	moments, moment generating function - examples, (Basic) results
	Def of Rings - Examples, Simple theorems	Characteristic function - examples, (Basic) results
	Integral Domain field,	Binomial distribution - theorem

SEPTEMBER	Integral Domain, field, Ideals and Quotient groups	Binomial distribution - theorems examples
	more on Ideals, maximal Ideal, Principle Ideal - theorems	Poisson, normal, Rectangular distribution - theorems, examples
	II C.A EXAMINATION	II C.A EXAMINATION
	Unique Factorisation theorem Euclidean Ring - def	Types of correlation, Rank Correlation
OCTOBER	Euclidean Ring (Contd) theorems, lemma, examples	Regression lines, derivation, Angles between reg. lines
	Euclidean Ring (Contd) theorems,	Computation of reg. lines - example group data
	REVISION	REVESION
	STUDY HOLIDAYS	STUDY HOLIDAYS
NOVEMBER	ODD SEMESTER EXAMINATION	ODD SEMESTER EXAMINATION
	"	"

MONTHS	III B.Sc	II B.Sc
NOVEMBER	Vector space definitions, lemma, examples, linear span	Chi-square dist, t, F distribution
	linear Independence, linear dependence, Basis, lemma, dimensions of vector space	Small Sample distributions
	Dual Space, Hom(V/W), Hom(V, V) Inner pdt Space, Norm of a vector	Estimation, types of Estimations
	Schwarz inequality, orthogonal Complement, Gram schmidt orth. process.	Problems, Rao black well theorem, Cramer Rao inequality
DECEMBER	Algebra of linear transformations, minimal polynomial.	Maximum likelihood, Interval estimation, Confidence intervals, large and Small samples
	CHRISTMAS HOLIDAYS	CHRISTMAS HOLIDAYS
JANUARY	Regualar transformations, Rank of a linear transformation	REVISION
	I C.A EXAMINATIONS	I C.A EXAMINATIONS
	Characteristic root of a linear trans. Characteristic vectors.	Statistical hypothesis, Critical region, test of Significance-large samples
	Matrix of a linear transf. Isomorphism of A(V)	test of Significance-Small samples, chi square, F distribution

FEBRUARY	Similar transformation, triangular form	correlation [illegible] Chi square test of goodness of fit Attributes
	Triangular form Contd.	Contingency table, one way classification,
	Trace and transpose, determinants	Two way classification + REVISION
	II C.A EXAMINATIONS	II C.A EXAMINATIONS
MARCH	Trace and transpose, determinants Contd	Basic principles of design of experiments
	Trace and transpose, determinant Contd.	Replication, Randamized block design and latin square
	REVISION	REVISION
	STUDY HOLIDAYS.	STUDY HOLIDAYS
APRIL	EVEN SEMESTER EXAMINATIONS	EVEN SEMESTER EXAMINATIONS

Lesson Plan for the Academic Year 2019-2020

Odd Semester

Papers Handled

S.No	Class	Subject	Hours
1.	III B.Sc Mathematics	Real Analysis - I	
2.	III B.Sc Mathematics	SBE - Maths for Competitive	
3.	II B.Sc Microbiology	Biostatistics	
4.	II UG SBE	Statistics for Everyday life	

Staff Incharge : V. Divya

Months	Weeks	III B.Sc Mathematics	II B Sc MicroBiology	III B Sc Mathematics	II UG SBE
JUNE	3	Introduction of Real Analysis -Basic Concepts	Introduction - Frequency distribution	Number System, Progression	Types of classification
	4	Functions, Definitions, L.U.B, G.L.B, Theorems	Histogram, frequency Polygon	Average, Ratio and Proportion	Formulation of frequency distribution
JULY	1	Countability - Problems and theorems - cantor set	Frequency curve - ogives	Percentage, Profit and Loss	Permutation
	2	Sequences defn - limit Problems - Convergence	Mean, Median	Interest, Time and Work	combination
	3	Divergent Sequence - Problems, Theorems	Quartiles, percentiles	Speed & Distance, Work & wages	Probability - Addition law Problems
	4	Bounded and Monotone Sequence -	Mode - position of Average Geometric and Harmonic mean	Work and wages	Multiplication law - problems
AUGUST	1		I CA Examination		
	2	Operations on Convergent Sequences & Divergent Sequences	Range, Interquartile range	Ages, Boats and Streams	Mean - Problems
	3	Alternating Series - Convergence, absolute convergence Limit & continuity in metric spaces	Conditional Mean deviation - variance and Standard deviation	Clocks and calendar	Median - problems

4	Limit of a function on real line - metric spaces	Coefficient of variation	Logarithms	Mode - Problems
SEPTEMBER 1	Limits in Metric Space.	Probability Scale - Difinition - problems	Simplifications	Bar diagram
2	Problems and Theorems on convergence.	Measurement of Probability	Heights & distance Probability.	Simple, Multiple and percentage bar diag
3	Problems and theorems on divergence	Laws of probability Conditional Probability	Permutations and combinations	Pie diagram
4		II CA Examinations		
OCTOBER 1	Functions continuous at a point on the real line	Scatter diagram - correlation	Alphabet test	Standard deviation
2	Reformulation - Simple Problems	Regression - correlation coefficient	Direction Sense Test	Quartile Deviation
3	Functions continuous on a metric Space	Regression Equations.	classification	Coefficient of variation
4	Revision	Revision	Revision	Revision
NOVEMBER 1		SEMESTER Exam Begins		

Lesson Plan for The Academic Year 2019 - 2020

Even Semester

Papers Handled

S.No	Class	Subject	Hours
1.	III B.Sc Mathematics	Real Analysis - II	6
2.	III B.Sc Mathematics	SBE - Maths for Competitive Exam	2
3.	II B.Sc MicroBiology	Biostatistics - II	6
4.	II UG SBE	Statistics for Everyday life	2

Staff Incharge : V. Divya

Total no of hrs = 16 hrs

MONTH	WEEKS	III B Sc Mathematics	II B Sc Microbiology	III B Sc Mathematics	I UG SBE
NOVEMBER	3	Open sets - closed sets - Definition - Theorems	Binomial distribution - problems	Number series, Ranking	Types of classificatio
	4	Closed Theorems	Poisson distribution - Problems	Pure sequence Test	formulation of frequency distribution
	1	Bounded sets - Theorems	Normal distribution - problems	Inserting the missing character	Permutation
DECEMBER	2	Bounded and Totally Bounded sets - Theorems	Large Sample - Test for mean, Equality of 2 mean	Series completion	Combination
	3	Problems on open and closed sets - compact metric Space	Test for proportion, Equality of 2 proportion	Coding, Decoding Relationships	Probability - problems.
	#	CHRISTMAS HOLIDAYS			
JANUARY	1	I CA EXAMINATIONS			
	2	Riemann Integral - Definition - Theorems	Small Samples - Test for mean, t-test	Logical venn diagrams	Average - problems
	3	Measurable sets - Definition - Theorems - properties of Riemann Integral	Types of population - Defn - Sample - Eg	Statements - Arguments Conclusions	Median - problems
	4.	Measurable sets - Defns - Theorems	Sampling variation & bias - non probability & Sampling Techniques	Arithmetical reasoning	mode - problems

FEBRUARY				
1	Properties of Measurable sets	Probability sampling Techniques - chi square distribution	series - Types	Bar diagram
2	Measurable sets - Theorems	chi square distribution problems	Analogy	Simple, multiple diagrams
3	Measurable sets - Theorem	χ^2 - problems - Applications	Analytical Reasoning	Percentage bar diagram
4	Revision	χ^2 - problems.	Analytical Reasoning	Pie diagram
MARCH				
1		II CA EXAMINATIONS		
2	Measurable functions - Defns Theorems	F-test problems	Tabulation	Standard deviation
3	Lebesgue integral for bounded function	Randomized Block design - problems.	Bar diagram	Quartile deviation
4	Properties of the Lebesgue Integral for bounded measurable fn.	Latin Square - procedure - problems.	Pie chart, Line graph	Coefficient of Variation.
APRIL		SEMESTER EXAMINATIONS		

LESSON PLAN FOR THE YEAR 2019 - 2020

PAPER HANDLED - ODD SEMESTER

III B.Sc., MATHEMATICS : PROGRAMMING IN ANSI 'C'

I BCA : STATISTICAL METHODS

I B.Sc., MATHEMATICS : ALGEBRA AND TRIGNOMETRY

TOTAL NO. OF HOURS : 16

MONTH	WEEK	III B.SC, MATHEMATICS	I B.SC, MATHEMATICS	II BCA
JUNE	IV	Importance Basic structure of C character set - C tokens - Keywords and Identifiers - Constants	-	Meaning and definitions of Statistics.
	V	Variables - Datatypes - Declaration of Variables. Assigning values to variables	Polynomial eqns, Imaginary and Irrational roots	classification and tabulation.
JULY	I	Symbolic constants - Declaring a variable as constant - Arithmetic operators - Relational operators.	Symmetric fns of roots in terms of co-eff for 3rd degree.	Diagrammatic rep and Graphical rep of Numerical data
	II	Logical - Arithmetic - Assignment. Increment & Decrement - conditional.	Reciprocal Eqns - Descartes Rule of signs - App. of roots by Horner's method.	Formation of frequency distribution - Histogram polygon and Ogives.
	III	Bitwise - Special operators Arithmetic Expressions - Evaluation of Expression	cubic eqn by cardan's method.	Lorenz curve. Mean, Median, Quartiles, Percentiles and Mode.
	IV	Precedence of Arithmetic operators - Type conversions	Biquadratic eqns.	Harmonic and Geometric Mean

	IV	Precedence of Arithmetic operators - Type conversions	Biquadratic eqns.	Harmonic and Geometric Mean
AUGUST	I	I CA	EXAMINATIONS	
	II	Operator Precedence - mathematical functions - Reading, simple if - The Else if Ladder	Ferari's Method, Binomial, Exponential and Logarithmic series.	Range, Quartile deviations Mean deviation
	III	Decision Making with conditional statements.	Summation and approxima-tion of these series.	Standard deviation
	IV	The switch statement - conditional operator - Goto statement - while, do, for statement	Expansion of $\sin\theta$, $\cos\theta$, $\tan\theta$, Expansion of $\sin^2\theta$, $\cos^2\theta$	Coefficient of variation - Definition of Probability.
SEPTEMBER	I	Jumps in Loops - One dimensional Array - Declaration, Initialization of one Dimensional Array	Expansion of $\sin\theta$, $\cos\theta$, $\tan\theta$ interms of θ.	Simple problems - Conditional probability
	II	Two dimensional array - Initializing two dimensional arrays.	Approximation of these limits to limits and app.	Random Variables
	III	Multidimensional arrays - User-defined fns. multifn Program	Hyperbolic and Inverse hyperbolic fns.	Mathematical Expectations, Binomial distributions.

HOURS	WEEK	II B.SC., MATHEMATICS	I B.SC., MATHEMATICS	II BCA
	IV	Elements of user-defined fns Defn of fns - Return values and their types	sums on hyperbolic and Inverse hyperbolic.	Poisson distributions
OCTOBER	I	Function calls - fn declaration Nesting of fns - Recursion	Relation between hyperbolic and circular functions.	Normal distributions
	II	II	CA EXAMINATIONS	
	III	Defining a structure - Declaration - Accessing structure - Initialization Copying and comparing structure	Logarithm of complex quantities.	Sums on Normal distribution
	IV	REVISION	REVISION	REVISION
NOVEMBER	I	STUDY	HOLIDAYS	
	II	ODD SEMESTER	EXAMINATION BEGINS	

LESSON PLAN FOR THE YEAR 2019 - 2020

PAPER HANDLED - EVEN SEMESTER

III B.SC, MATHEMATICS : PROGRAMMING IN ANSI "C++"

II BCA : STATISTICAL METHODS AND NUMERICAL METHOD.

I B.SC, MATHEMATICS : DIFFERENTIAL EQUATIONS AND NUMERICAL LAPLACE TRANSFORMS

TOTAL NO. OF HOURS : 16

MONTHS	WEEK	III B.SC., MATHEMATICS	I B.SC., MATHEMATICS	II BCA
NOVEMBER	3	Basic Concepts of oop's - Benefits of oop's - Structure of C++ Program - Tokens	First order higher degree solvable for x, y and p	Correlation and Regression Analysis
	4	Keywords - Identifiers and constants - Basic data types - User defined data types	clairaut's form - Exact differential Eqns	Rank correlation coefficient - Simple Regression of X on Y,
DECEMBER	1	Derived data types - Symbolic constants - Type compatibility Declaration of Variables	Total differential Equations $Pdx+Qdy+Rdz=0$	Regression of Y on X. Large sample tests - Test for single Mean and SD
	2	Dynamic initialization of variables - Reference Var - Operators in C++ - Scope Resolution operator	Second order Eqns with constant coefficients - P.I for $e^{ax}V$, V is x^n.	Difference between Mean and SD. Test for small correlation coefficient
	3	Member dereferencing operators Memory Management operators. Manipulators - Type Cast operators	$\cos mx$, $\sin mx$, [m is a positive constant]. Second order D.Eqns	Small samples: Test for single mean, SD.
	4		CHRISTMAS HOLIDAYS	

JANUARY	1	Expressions - their types	Methods of variation of Parameters.	Paired t-test
	2		I CA EXAMINATIONS	
	3		PONGAL HOLIDAYS	
	4	Introduction - fn protocol - call by referencing - return by reference - Inline fns - Default operator AC++ program with class	Formation of PDE by eliminating arbitrary constants and arbitrary functions	Chi-square test for goodness for fit
	5	Making an outside fn inline - Nesting of members fns - Private member fns - Arrays within a class - Memory Allocation	Complete, singular and general Integral - solution of eqns of standard types.	Test for Independence of attributes in Contigency table.
FEBRUARY	1	Objects - Friendly fns - Returning objects - Const member fns - pointer to members - Introduction - constructors - Parameterized constructors	$f(p,q)=0$, $f(x,p,q)=0$, $f(y,p,q)=0$, $f(z,p,q)=0$, $f_1(x,p)=f_2(y,p)$	Procedure for test of equality of two population variances

MONTHS	WEEK	II B.SC, MATHEMATICS	I B.SC, MATHEMATICS	II BCA
	2	Multiple constructors in a class constructors with default arguments - Copy Constructor	clairaut's form and Lagrange's Method. Laplace Transform - Transforms of elementary functions.	Analysis of Variance. ANOVA - two ways classification.
FEBRUARY	3	Const Objects - Destructors - Defining operator overloading overloading Unary operators	Basic property - Transforms of derivatives and integrals Periodic functions of Laplace Transforms	One way classification.
	4		II CA EXAMINATIONS	
	1	overloading binary thomas operators overloading binary operators - Using friends - Rules for overloading operators.	Inverse Laplace Transforms - soln of linear Ordinary differential Equations	Finite differences, Newton's Forward and backward difference formulas.
	2	Introduction - Defining derived classes - Single Inheritance - making a private member Inheritance - Multilevel inheritance	of second order with constant coefficients Using Laplace transformations	Lagrange's formulae Lagrange's Interpolation Inverse formula
MARCH	3	Hierarchical Inheritance - hybrid inheritance - Virtual base classes - Abstract classes	Clairaut's form and Lagrange's Method	REVISION

MARCH	2	Introduction - Defining derived classes - Single Inheritance - making a Private member Inheritance - Multilevel inheritance	of second order with constant coefficients Using Laplace transformations	backward difference formulae. Lagrange's formulae Lagrange's Interpolation Inverse formula
	3	Hierarchical Inheritance - hybrid inheritance - Virtual base classes - Abstract classes	Clairaut's form and Lagrange's Method	REVISION
	4	Pointers - Pointers to objects - Pointers to derived class - Virtual fns - Pure Virtual fns - Formatted I/o and Stream	REVISION	REVISION
APRIL	1		STUDY HOLIDAYS	
	2	EVEN	SEMESTER EXAMINATIONS	

LESSON PLAN FOR THE YEAR (2019 - 2020)

PAPERS HANDLED - ODD SEMESTER

CLASSES	SUBJECT	HOURS
II B.Sc Maths	Solid Geometry	5
I - B.Com	Business Mathematics & Statistics.	5
III Maths (SBE)	Mathematics for Competitive Examinations	2
II Maths (SBE)	Data Interpretation	2
III Maths	C - Practical	2
	Total Hours.	16.

Month	Week	II - BSc Maths	I - B.Coms	III UG. SBE	II UG. SBE.
June	4th	Introduction to planes General equation of plane Equation of a plane in the normal form		Introduction to Number systems Problems.	
	5th	Plane passing through three given points - Problems.	UNIT - I. Matrices Defn. of matrix, Types of Matrix, Matrix operations, Determinant	Time and Work	Tabulation
July	1st	Condition for the homogeneous equation of 2nd degree to represent a pair of planes - Problems.	Singular and Non-singular matrix, Inverse of a matrix, Co-factors and Rank of a matrix	Problems under Progression. Average.	Tabulation Introduction to Problems.
	2nd	UNIT-2 Straight line Symmetric form of a straight line	Solution of System of linear equations (cramers) using Cramers rule find x, y, z.	Ratio and Proportion Percentage	Exercise problems.

Month	Week	II - B.Sc Maths	I - B.Com	III UG SBE	II UG SBE
July	3rd	Image of a point with respect to a plane Image of a line with respect to a plane.	UNIT-II Differentiation Derivatives of x^n, e^x $\log x$ rules. Chain rule, Successive differentiations.	Profit & Loss Simple & Compound Interest	T. Exercise problems.
	4th	Length and equation of the shortest distance between two skew lines.	Uses - Marginal cost, Elasticity, Increasing and Decreasing function	Time, Work; Speed and distance.	Introduction to Bar graphs
	1st	I	CA Examinations.		
August	2nd	Length of the tangent - Tangent Plane.	Introduction to classification Characteristics - Objects - Rules of classifications.	Ages, Boats and Streams problems.	Bargraph Exercise & Examples
	3rd	Section of a sphere by a plane - Orthogonal	Individual - Discrete - continuous frequency problems.	Clocks and Calendars	Problems.
	4th	Spheres - Equation of sphere through a given circle.	Graph of frequency - Histogram - Frequency polygon - Frequency Curves.	Logarithms problem.	Introduction to Pie Chart.

Month	Week	II B.Sc Maths	I - B.Com	III UG (SBE)	II UG (SBE)
September	1st	Equation of Cone with vertex, guiding curve at origin - Condition of 2nd degree to represent a cone.	Measures of Central tendency, Arithmetic mean - median - mode - Weighted - Geometric mean problems.	Simplifications, Heights and Distance	Pie-Chart Examples.
	2nd	Right circular cone Enveloping cone - Tangency of a plane to a Cone.	Harmonic mean - Combined - Weighted Empirical formulas.	Permutation and combinations, Problems in Probability	Pie-charts Examples.
	3rd	II CA	Examination		
	4th	Equation of a Cylinder with a given generator and a given guiding curve.	Introduction to Measures of Dispersion and Skewness.	Verbal Reasoning Alphabet Test.	Pie chart Exercise.
	1st	Right Circular Cylinder Enveloping cylinder.	Defn. for Range - Quartile Deviation	Alphabet Test	Pie-chart Exercise problems

Month	Week	II - B.Sc Maths	I - B.Com	III UG (SBE)	II UG (SBE)
	2nd	Enveloping cylinder problems.	Mean deviation - Standard deviation	Direction sense test	Problems
October	3rd	Enveloping cylinder as a limiting form of enveloping cone.	Karl pearsons Co-efficient of Skewness.	Direction Sense test	Revision
	4th	Problems.	Bowleys Co-efficient of Skewness.	Classification problems.	Revision.
November	1st	Study Holidays			
	2nd	Odd Semester Examinations		Begins	

LESSON PLAN FOR THE YEAR (2019-2020).

PAPERS HANDLED - EVEN SEMESTER.

CLASSES	SUBJECT	HOURS.
II B.Sc Maths	Numerical Analysis	4
I B.Com.	Business Statistics & Operation Research	5
III B.Sc Maths	SBE: Mathematics for Competitive Examinations	2.
II UG	SBE: Data Interpretation	2.
II Maths	Environmental Studies.	2.
III Maths	C++ Practical	2.
	Total Hours	17.

Month	Week	II B.Sc Maths	I-BCom	III UG (SBE)	II UG (SBE)	II Maths EVS
November	3rd	Unit-I Finite differences First difference - Expressing any value of y in terms of y_n & the Backward difference of y_n.	UNIT-I Correlation & Regression Correlation - definitions - Types of correlation	UNIT-I Number, Ranking & Time Sequence tests	Tabulation.	Def. of Environment - Scope - Importance Components.
	4th	Differences of apolynomial - Factorial polynomial finite integration (Δ^{-1})	Karl pearson's co-efficient of correlation	Inserting the missing Character	Tabulation	Segments of environment.
	1st	Summation of series - Montmorts theorem - UNIT-II Interpolation Gregory - Newton forward interpolation (for equal intervals)	Spearman's Rank Correlation for Repeated Ranks - Non-Repeated ranks	UNIT-II Series Completion Coding - Decoding.	Tabulation Excercises.	Multidisciplinary nature of Environmental Studies.
December	2nd	Gregory - Newton Backward interpolation formula for equal intervals - Equidistant terms with one or more missing values.	Regression equations - Regression Co-efficients	Relationships.	Bargraphs.	Ecosystem - Structure & functions
	3rd	Central differences and Central differences table	Unit-IV Transportation and Assignment problems.	Logical Venn diagram	Bargraphs.	Food chain - web Ecological pyramids Types of Ecosystem

Month	Week	II B.Sc Maths	I-B.Com	III UG (SBE)	II UG (SBE)	II Maths EVS
January	4th		Christmas Holidays			
	1st	Gauss's forward interpolation formula - backward interpolation formula.	IBFs - Test for optimality - MODI Method - Hungarian method	UNIT-II Statements Arguments	Revision	Energy flow in Ecosystem.
	2nd		I CA Examinations			
	3rd		Pongal Holidays			
	4th	UNIT-III Central differences Stirling's formula - Bessels formula - Laplace - Everett formula	UNIT-III Probability Permutation - Combination Trial - Event - Sample space - Mutually exclusive	Statement - Conclusions.	Bargraph. Exercises	Bio diversity - General Terms. Types of diversity
	5th	Relation between Bessels and Everetts formula - Divided differences. Properties of divided differences.	Exhaustive events - Independent events. Classical def. of Probability - Addition & Multiplication	Arithmetical Reasoning	Bargraph. Exercise problems	India as a mega bio diversity zone

Month	Week	II-BSc Maths	I-BCom	III UG (SBE)	II UG (SBE)	II Maths (EVS)
February.	1st.	Relation between D.D & F.D. Thm: Newtons d.d formula - deduction - deduce Gregory Newtons interpolation forward formula for equid intervals	UNIT-V Game Theory. Meaning - Maximin - Minimax principles.	Series	Introduction to Pie-chart	Threats - Conservation - Values of Biodiversity
	2nd.	UNIT-IV Lagranges interpolation formula, different forms of lagranges interpolation formulae	Saddle points - Games without saddle points (Mixed strategies).	Analogy	Pie chart Examples.	Environmental pollution - Causes and effects
	3rd.	Newtons forward & backward difference formula to get the derivative - Derivative using stirlings formula - To find maxima and minima of the function given the table values.	Dominance property (Excluding graphical and LPP methods).	Analytical Reasoning	Pie chart Exercises.	Control measures - Solid waste management
	4th	II CA Examinations.				
	1st.	UNIT-V Numerical Integration A general quadrature formula for equidistant ordinates	UNIT-II Index Numbers Various methods of Construction of Index	Tabulation	Pie Chart Exercises	

Month	Week	II B.Sc Maths	I B.Com	III UG (SBE)	II UG (SBE)	II Maths (EVS)
March	2nd	Newton forward and backword (or Newton Cotes formula) - Trapezoidal Rule.	Weighted - Unweighted Index numbers - Quality - Value Index Numbers.	Bargraph	Problems.	Environmental Protection Act 1986 - Agencies.
	3rd	Geometrical Interpolation Truncation Error in Trapezoidal rule - Rombergs method.	Test of Consistency of Index Numbers - Time Reversal Test - Factor Reversal Test.	Piechart	Revision.	Air (Prevention & Control) act 1981)
	4th	Simpsons one third rule - Simpsons three eighth rule - Weddle's rule.	Chain based I.N - Fixed Based I.N - Base shifting - Family Budget method.	Line graph	Revision	Water (prevention & control) act 1976 Wild life Act 1972 Forest Conservation, 1980.
April	1st		Study Holidays			
	2nd		Even Semester	Examinations		

Academic year (2019-20) (Odd Semester)

lesson plan for the year (2019-20)

S.NO	Class	Subject	hrs
(1)	II BSc maths	Static	5
(2)	I BSc physics	Allied Mathematics	6
(3)	I BSc (other dept)	SBE: Quantitative Aptitude	2
(4)	III BSc (NME)	NME: Com Mathematics for Competitive examinations	3

Total hours = 16.

*Value education = 1 hr

Months	Week	I BSc Physics	II BSc maths (Statics)	I: SBE Quantitative Aptitude	NME: Mathematics for Competitive examination
June	IV II	Unit-I: Matrices: Symmetric, Skew Symmetric & Hermitian	Unit-I: Newton's law of motion - forces - Resultant of two forces on a particle -	Unit-I: Number System & problems on numbers.	Progression, Average,
	V I	Skew Hermitian, orthogonal Unitary matrices.	Resultant of 3 forces related to a Δ^{le} acting at a point	Decimals	Ratio & proportion - Percentage, profit & loss
	I	Eigen-Values & Eigen vectors - Cayley Hamilton thm (without Proof)	Resultant of several forces acting on a particle.	HCF and LCM	Simple interest, Compound interest
July	II III	Verification & Computation of inverse - Diagonalize of a matrix.	Equilibrium of a particle under 3 forces.	Average	Ages, Boats & Streams, Clocks & Calendars (U-2)
	I II	U2: Theory of Equations: Poly eqn - Irrational roots & Complex roots	Δ^{le} of forces - Lami's theorem	Percentage	Logarithms, Heights & distance, Work & Wages
	IV	Reciprocal eqn - Descarte's rule of Signs.	Equilibrium of a particle under Several forces	Square root	Time and Work, Speed & distance

		I- Physics	I BSc maths I CA Examination.	I SBE	NMC.
	II	Approx. of roots of poly. eqn by Newton's & Horner's methods.	Moment of a force - Moment of a force about a line	Cube roots	Series Completion, Coding - Decoding,
August	III	U3: Trigonometry: Expansion of sinnθ, cosnθ, tannθ	Scalar moment	fractions	Relationships - logical Venn diagram
	IV	Expansions of sinθ, cosθ, tanθ interms of θ	Unit-II: parallel forces, pt of application of resultant of many ||el forces	Simplication.	Unit-IV Logical deduction Statements - Arguments
	I	Logarithm of a Complex number.	Varignon's theorem - Parallel forces at the Vertices of a Δle	Revision	Conclusion, Ranking & Time Seqn test.
September	II	U4: Diff. calculus. Curvature & R.O.C in Cartesian Coordinates	forces along the Side of a Δle	Revision	Arithmetical Reasoning
	III	Polar Coordinates, p=r eqns.	Couples, Moment of a Couple.		Series

IV	Evolutes & Involutes.	Arm & Axis of a Couple, Resultant of several Coplanar forces.	Revision	Analogy - Analytical Reasoning.
V	U5: Integral Calculus Integration by parts	Moment of a Certain Couple as an area.	Revision	Revision.
VI		II CA Examination		
VII	Bernoulli's formula, & problems.	Friction (Definition). Angle of friction - Cone	Revision	Revision.
VIII	Reduction formulae: ($\sin^n x$, $\cos^n x$, $\tan^n x$)	Law of friction, limiting equilibrium of a particle on an inclined plane.	Revision	Revision
IX	$\operatorname{Cosec}^n x$, $\sec^n x$, $\cot^n x$.	Problems involving frictional force. Unit-5: Centre of mass - Centre of gravity	Revision	Revision

November	IV		finding mass centre (not using integration)	
	V	Revision	finding mass centre using integration	Revision	Revision
	VI		mass centre of a non-homo solid Moment of a mass	
	VII	Study - Holidays.		
	VIII	Odd-II Semester Examination Begins.		
	IX			
	X			
	XI			
	XII			

Academic year (2019-20) [Even Semester]

Lesson plan for the year (2019-20).

S.NO	Class	Subject	hrs.
(1)	II BSc maths	Dynamics	4
(2)	I BSc physics	Allied Mathematics - II	6
(3)	I BSc (other dept)	SBE: Quantitative Aptitude	2
(4)	III BSc (NME)	NME: Mathematics for Competitive Examination	3
(5)	II B.Com (B&I)	Value Education	1

Total hrs = (16)

Months	Weeks	I BSc physics	II BSc maths (Dynamics)	I SBE (other dept)	NME. (other dept)
November	3rd	Scalar & Vector pt func. defn with examples. Defn of grad ϕ ($\nabla\phi$) with eg & pb.	Unit-I : Velocity, Basic Unit of Vel- Vel- of a particle describing a Circle	Unit-I : Number System problems on numbers, Decimals.	progression, Average
	4th	Defn of Directional derivatives & problems. Defn of operators & gradient problems	Resultant Velocity - Relative Vel. - Accln - Coplanar motion.	HCF & LCM, Average	percentage, Ratio & proportion
	1st	Defn of Curl, divergence, and integration	Angular velocity - Relative Angular Velo.	Percentage, Square root	profit & loss, S.I, C.I
December	2nd	P.D.E, formation pde by eliminating of arb. Constant.	Unit-II : SHM - projection of a particle having a Uniform	Cube root	Ages, Boats & streams Clocks & Calendars
	3rd	formation of pde by Soln of std types of I st order Eqn. (i) $f(P,q)=0$ (ii) $f(x,P,q)=0$	Circular motion - Compo. of 2 SHM Same period problems on SHM.	fractions	logarithms, Heights & distance, Work & Wages
	4th	(iii) $f(y,P,q)=0$ (iv) $f(z,P,q)=0$	Unit-III : force on a projectile, Displacement		Time & Work. Speed &

	(v) $f_1(x,p)=f_2(y,z)$ · Line Surface $z=px+qy+f(P,q)$ · Volume surface	as a Combination of Vertical & hori. displacement	Simplification	distance
		Christmas Holidays		
1st	Integrals in problems, Gauss div. thm, Stoke & Green's thm problem	Nature of a trajectory - Results pertaining to the motion of a projectile.	Revision	Series Completion, Coding & Decoding, Relationships
2nd & 3rd		ICA Examinations &	Pongal Holidays.	
4th	Defn of laplace transform, Inverse laplace transform	Max hori. range for a given vel. projectile projected on an inclined plane.	Revision	Logical Venn diagram. Unit-IV logical deduction,
5th	Defn of fourier series finding fourier coeff. for a given period func.	Unit-IV. Impact of sphere law of impact - impact of 2 smooth spheres	Revision	Statements: Arguments, Conclusion.
1st	Finding fourier coeff of a given periodic fnc. with period $(0,2\pi)$ for odd & even fnc.	Direct & oblique impact of 2 smooth spheres	Revision.	Ranking & Time Seqn test.

2nd	Half range Series.	Unit-V: Central Orbits, Diff eqn of Central Orbits (polar & pedal form)	Revision	Arithmetical Reasoning, Series, Analogy
3rd	problems on half range Series	Laws of a Central Orbit Methods to find the Central Orbits.	Revision	Analytical Reasoning
4th		II CA-Examinations.		
1st	Fourier Series Even	Revision	Revision.	Analytical in Straight line.
2nd	Fourier Series Odd	Revision	Revision	Analytical in Triangles.
3rd	Revisions.	Revision	Revision	Analytical in Square & Rectangles.
4th	Revisions.	Revision.	Revision.	Revision.
1st		Study Holidays		
2nd		Even Semester	Examinations.	

LESSON PLAN FOR THE YEAR 2019-2020

PAPERS HANDLED

ODD SEMESTER

I Bsc. Mathematics : Calculus

No: of Hrs 5

III Bsc Mathematics : Complex Analysis

No: of Hrs 6

I B.com (B & I) : Business Mathematics & Statistics

No: of Hrs 5

III Bsc. Comp. science : Value Education

No: of Hrs 1

Total No: of Hours : 17

Months	Week	I Bsc Mathematics	III Bsc. Mathematics	I B.com B & I
	3	-	Analytic functions: Regions in the complex plane, Limits and Continuity Theorems on limits, Limits at infinity	-
June	4	Curvature: Radius of Curvature in cartesian Co-ordinates	Analytic functions: Continuity Derivative, Differentiation formulae - Derivations & problems	Matrices – Types of Matrices, Matrix operations. Determinant of a Matrix – Cramer's Rule.
July	1	Polar co-ordinates, Centre of curvature	Analytic function: Cauchy Riemann Equations	Singular and Non-Singular Matrices – Inverse by co-factor Method
	2	Circle of Curvature Evolutes and Involutes.	Mappings by Elementary Transformations – Bilinear, cross-ratio, Linear Transformation	Rank of a Matrix – Unit III – Introduction Meaning of classification frequency Distribution.
	3	Asymptotes and Envelopes – Definition. Methods of finding Asymptotes.	Transformation $W=\frac{1}{z}$, $W=\sqrt{z}$ $W=e^z$, Transformation $W=\sin z$	Discrete and continuous frequency Distributions.
	4	Envelopes: one parameter family of curves, Two Parameter family of curves	Transformation $W=\cos z$ Linear fractional Transformation – Implicit function	Cumulative frequency distribution – Graphs – histogram, frequency polygon and curves.

	1	–	I CA Examination Begins	
August	2	Integration : Integration of Irrational and Trignometric function.	Complex Integration : Contour Definite Integrals, Line and Contour – Examples, Cauchy's Thm.	Differentiation – Derivatives of standard functions e^x, x^n, $\log x$, constant
	3	Bernoulli's formula properties of Definite Integrals.	Cauchy – Goursat Thm, Simply and Multiply connected domains – Cauchy Integral formula	Rules of Differentiation, upto Second Derivative
	4	Multiple Integrals Double and Triple Integration.	Derivatives of Analytic functions – Morera's Theorem Cauchy's Inequality.	Marginal concepts – Elasticity of Demand
September	1	Change of order of Integration.	Liouville's Theorem and the fundamental theorem on Algebra. Convergence of Seq. and Series.	Increasing and Decreasing functions – Maxima and Minima. Arithmetic Mean.
	2	Application of Double and Triple Integrals.	Taylor series, Examples, Laurent Series, Examples.	Median – Mode – Emperical formulae.
	3	Triple Integrals – finding area and volume.	Absolute and Uniform Convergence of power series.	Combined and weighted arithmetic mean – Geometric and Harmonic Mean.

Months	Week	I Bsc. Mathematics	III Bsc. Mathematics	I B.com (B & E)
September	4	-	II CA EXAMINATIONS	
October	1	Improper Integrals	Residues and poles : Zeroes of analytic functions, singularities Types of singularities.	Measures of Dispersion and skewness.
	2	Beta and Gamma functions	Riemann Theorem, Wierstrass Theorem, Residues	Range - Quartile Deviation
	3	Application of Gamma functions in Evaluation of Double & Triple Integrals	Residue Theorem, Residues at poles, zeroes and poles of order 'm'	Mean Deviation and Standard Deviation
	4	Application of gamma functions in evaluation of Double and Triple Integrals	Two Types of Integrals Involving sines and cosines	Karl pearsons and Bowley's coefficient of Skewness.
November	1	-	SEMESTER EXAMS BEGIN	

LESSON PLAN FOR THE YEAR 2019-2020

PAPERS HANDLED

EVEN SEMESTER

I BSc Mathematics : Vector Analysis
No: of Hours : 5

III Bsc Mathematics : Operations Research
No: of Hours : 6

I B.com (B & I) : Business Statistics and Operations Research
No: of Hours : 5

III Bcom (General) : Value Education : 01 hr

Total No: of Hours = 17

STAFF INCHARGE : Md. SHAHIRA SULTHANA

Month	Week	I BSC Mathematics	III BSC Mathematics	I B.Com (B&I)
NOVEMBER	3rd	Differentiation of Vectors - Scalar and Vector point function	Linear programming : formulation of L.P.P - problems on L.P.P - Graphical Method.	Correlation - Definition - Uses and limitations - Karl pearson's Coeff. of Correlation - Spearman's Rank correlation.
	4th	Determination of Unit tangent and Unit Normal Vectors and Directional derivative.	Problems on Graphical Method - Standard form of L.P.P - Simplex Method - problems on Simplex Method.	problems on Rank Correlation - Regression equations of x on y and y on x.
December	1st	Angle between two surfaces - Equation of tgt plane and Normal plane	Minimization - Simplex Method - Transportation Model - structure - Formulation.	Transportation Model - Structure - Formulation - Finding I.B.F.S
	2nd	Equation of Normal - Divergence - Problems on Divergence.	Finding I.B.F.S - N.W.C.R, L.C.M - Algorithms and Problems V.A.M.	N.W.C.R - L.C.M - Algorithms and problems.

	3rd	Curl of a vector, problems on curl of a vector – Solenoidal and Irrotational vectors	Modi – Method – optimality Test Based problems – Unbalanced – Degeneracy and Maximization problems.	V.A.M – Modi Method – optimality Test – Unbalanced T.P – Assignment Model – Hungarian Method.
	4th		CHRISTMAS HOLIDAYS	
January	1st	Revision for I CA	Revision for I CA	Revision for I CA
	2nd		I CA EXAMINATIONS	
	3rd		PONGAL HOLIDAYS	
	4th	Integration of Vectors – Line Integrals	Assignment Model – Formulation of A.M – Hungarian Method – Multiple optimal soln.	permutation – Combination – Trial event – Sample space – Mutually Exclusive Events
	5th	Surface Integrals – Gauss Divergence Theorem – Verification of G.D.T.	Maximization of Assignment problems – Travelling salesman problem – Solutions to T.S.P.	Exhaustive events – Independent events – probability – Definition and problems.

Month	Week	I Bsc Mathematics	III Bsc. Mathematics	I. B.com (B & I)
February	1st	Volume Integrals – Green's Theorems – Applications of G.T.	Game Theory – Introduction – Characteristics – Two person zero sum game with saddle Point – Maxmin – Minimax principle.	Addition and Multiplication Theorems – problems – Game Theory – The Maximin and Minimax principles – Saddle points.
	2nd	problems on Verification and application of G.D.T and Greens Thm.	problems on Maxmin – Minimax principle – Game problems of Mixed Strategies.	Games with saddle points – Mixed strategies – Dominance property.
	3rd	Stokes Theorem – Verification of Stokes Thm – Applications problems.	Arithmetic Method – Algebraic Method – Dominance – Graphical Method.	problems on Dominance property Index Numbers – Various Methods of Construction of Index Numbers.
	4th		II CA EXAMINATIONS	

March				
	1	Fourier series – Definition – Finding Fourier Co-efficient for a given periodic function with period 2π	PERT and CPM – Introduction Network diagram representation – Rules for constructing Network.	Unweighted Index Numbers – Weighted Index Numbers – Quantity Index Numbers.
	2nd	Finding Fourier Series and Fourier Coefficient for odd and even functions.	Time Calculations – Determination of float or slack Times.	Value Index Numbers – Test of consitency – Time Reversal Test – Factor Reversal Test – problems.
	3rd	Half Range Series – problems.	Critical path Method – procedure of determining Critical path – PERT.	Chairbase and fixed base index Numbers – Consumer price Index – Aggregate Method – Family budget Method.
	4th	Revision	Revision	Revision

Month	Week	I Bsc Mathematics	III Bsc. Mathematics	I. B.com(B&I)
April	1st		STUDY HOLIDAYS	
	2nd		EVEN SEMESTER EXAMINATIONS.	