

Lesson Plan for Course: B.Sc(H) Sem-I Code: MTMACOR01T Credit: 6

- Course Name: Calculus, Geometry and Ordinary, Differential Equation
- Course coordinator: Pintu Debnath
- Course Outcomes:
 - CO-1. To trace curve in two dimensional Cartesian and polar coordinates.
 - CO-2. Able to work with higher order derivatives, and concavity, inflection points, envelopes, asymptotes of a curve and to calculate their arc length, area and surface of revolution.
 - CO-3. To construct Reduction formulae, derivations and illustrations of reduction formulae.
 - CO-4. To solve several ODEs.
 - CO-5. To solve the problems related to two and three dimensions.

Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
Dec			00	Theoretical-00 Tutorial-00
Jan	Unit-1: Hyperbolic functions, higher order derivatives, Leibnitz rule and its applications to problems of type $e^{ax+b} \sin x$, $e^{ax+b} \cos x$, $(ax+b)^n \sin x$, $(ax+b)^n \cos x$, Concavity and inflection points, envelopes, asymptotes, curve tracing in Cartesian coordinates, tracing in polar coordinates of standard curves, L'Hospital's rule, applications in business, economics and life sciences.	BS	10	Theoretical-08 Tutorial-02
	Unit-2 : Reduction formulae, derivations and illustrations of reduction formulae for the integration of $\sin^n x$, $\cos^n x$, $\tan^n x$, $\sec^n x$, $(\log x)^n$, $\sin^n x \sin^m x$, parametric equations, parametrizing a curve, arc length, arc length of parametric curves, area of surface of revolution. Techniques of sketching conics.	SM	10	Theoretical-08 Tutorial-02
1st Internal Assessment				
Feb	Unit-4: Differential equations and mathematical models, General, particular, explicit, implicit and singular solutions of a differential equation. Exact differential equations and integrating factors, separable equations and equations reducible to this form, linear equation and Bernoulli equations, Special integrating factors and transformations.	BS	12	Theoretical-08 Tutorial-02
	Unit-3: Reflection properties of conics, translation and rotation of axes and second degree equations, classification of conics using the discriminant, polar equations of conics, Spheres, Cylindrical surfaces. Central conicoids, paraboloids, plane sections of conicoids, Generating lines, classification of quadrics, Illustrations of graphing standard quadric surfaces like cone, ellipsoid.	SM	12	Theoretical-08 Tutorial-02
2nd Internal Assessment				
	Revision	BS SM	03 04	Theoretical-00 Tutorial-07
End Semester Examination				
	Assessment: Internal Assessment & Assignment		Total: 51 Hrs	Theoretical-36 Tutorial-15

Books:

- An Introduction to Integral Calculus, Ghosh & Maity, Central Book Agency.
- An Introduction to Differential Equation, Ghosh & Maity, Central Book Agency.
- Coordinate Geometry, R. M. Khan, Central Book Agency

Lesson Plan for Course: B.Sc(H) Sem-I Code: MTMACOR02T Credit: 6

- Course Name: Algebr
- Course coordinator: Sudip Mondal
- Course Outcomes:
 - CO-1. To aware with polar representation of complex numbers, n -th roots of unity, De Moivre's theorem with its application.
 - CO-2. Able to apply Descarte's rule of signs and to solve cubic and biquadratic equations, $AM \geq GM \geq HM$ in inequality.
 - CO-3. To familiar with equivalence relations, well-ordering property of positive integers, Division algorithm, principles of mathematical induction.
 - CO-4. To find rank of a given matrix, and to solve systems of linear equations
 - CO-5. To find out Eigen values, Eigen Vectors, inverse of a matrix though Cayley-Hamilton theorem.

Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
Dec	Unit-1: <i>Theory of equations:</i> Relation between roots and coefficients, Transformation of equation, Descartes rule of signs.	BS	04	Theoretical-03 Tutorial-01
	Unit-1: <i>Inequality:</i> The inequality involving $AM \geq GM \geq HM$, Cauchy-Schwartz inequality.	PD	04	Theoretical-03 Tutorial-01
	Unit-1: Polar representation of complex numbers, n -th roots of unity.	SM	04	Theoretical-03 Tutorial-01
Jan	Unit-1: <i>Theory of equations:</i> Cubic (Cardan's method) and biquadratic equations (Ferrari's method).	BS	04	Theoretical-03 Tutorial-01
	Unit-2: Equivalence relations and partitions, Functions, Composition of functions, Invertible functions, One to one correspondence & cardinality of a set. Well-ordering property of positive integers, Division algorithm, Divisibility & Euclidean algorithm. Congruence relation between integers. Principles of Mathematical Induction, statement of Fundamental Theorem of Arithmetic. Unit-3: Systems of linear equations, row reduction and echelon forms, vector equations, the matrix equation $Ax = b$.	PD	14	Theoretical-10 Tutorial-04
	Unit-1: De Moivre's theorem for rational indices and its applications.	SM	04	Theoretical-03 Tutorial-01
	1 st Internal Assessment			
Feb	Unit-3: Solution sets of linear systems, applications of linear systems, linear independence. Unit 4: Matrix, inverse of a matrix, characterizations of invertible matrices, Rank of a matrix, Eigen values, Eigen Vectors and Characteristic Equation of a matrix, Cayley-Hamilton theorem and its use in finding the inverse of a matrix.	PD	12	Theoretical-10 Tutorial-02
	2 nd Internal Assessment			
Mar	Revision	BS	01	Theoretical-06 Tutorial-00
		PD	04	
		SM	01	
End Semester Examination				
	Assessment: Internal Assessment & Assignment		Total: 52 Hrs	Theoretical-41 Tutorial-11

Books:

- S. K. MAPA, Classical Algebra, Sarat Book Distributor, India, 2019.
- S. K. MAPA, Higher Algebra, Sarat Book Distributor, India, 2019.

Lesson Plan for Course: B.Sc(H) Sem-III Code: MTMACOR05T Credit: 6

- Course Name: Theory of Real Functions
- Course coordinator: Biswajit Sarkar
- Course Outcomes:
 - CO-1. To understand limits of functions including through their definition, continuous functions and uniform continuity theorem.
 - CO-2. Aware about differentiability of a function.
 - CO-3. To familiar with several mean value theorems and their applications.
 - CO-4. Able to express Taylor's and Maclaurin's series expression of several functions.
 - CO-5. Able to apply Taylor's theorem to convex functions and inequalities.

Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
Jul-Oct	Unit -1: Limits of functions ($\epsilon - \delta$ approach), sequential criterion for limits, divergence criteria. Limit theorems, one sided limits. Infinite limits and limits at infinity, Continuous functions, sequential criterion for continuity and discontinuity. Algebra of continuous functions. Continuous functions on an interval, intermediate value theorem, location of roots theorem, preservation of intervals theorem. Uniform continuity, non-uniform continuity criteria, uniform continuity theorem. Unit -2 : Differentiability of a function at a point and in an interval, Caratheodory's theorem, algebra of differentiable functions. Relative extrema, interior extremum, theorem. Rolle's theorem. Mean value theorem, intermediate value property of derivatives, Darboux's theorem. Applications of mean value theorem to inequalities and approximation of polynomials. Unit-3: Cauchy's mean value theorem. Taylor's theorem with Lagrange's form of remainder, Taylor's theorem with Cauchy's form of remainder, application of Taylor's theorem to convex functions, relative extrema. Taylor's series and Maclaurin's series expansions of exponential and trigonometric functions, $\ln(1+x)$, $1/ax+b$ and $(1+x)^n$. Application of Taylor's theorem to inequalities.			All course topics of this core MTMACOR05T have already been completed
Jan	1 st Internal Assessment			
Feb	2 nd Internal Assessment			
Mar	Revision	BS PD SM	02 04 02	Theoretical-08 Tutorial-00
End Semester Examination				
	Assessment: Internal Assessment & Assignment		Total: 08 Hrs	Theoretical-08 Tutorial-00

Books:

- Walter Rudin, Principles of Mathematical analysis, Third Edition, Mc Grawhill Education
- S. K. MAPA, Introduction to Real Analysis, Sarat Book Distributor, India, 2019.

Lesson Plan for Course: B.Sc(H) Sem-III Code: MTMACOR06T Credit: 6

- Course Name: Group Theory-I
- Course coordinator: Sudip Mondal
- Course Outcomes:
 - CO-1. To understand various types of groups, order of an element of a group, subgroups and their product.
 - CO-2. To familiar with cyclic group and their classification, permutation on group and cosets.
 - CO-3. To prove Lagrange's theorem and its application to prove Fermat's little theorem.
 - CO-4. To understand external direct product of a finite number of groups and other familiar groups.
 - CO-5. To learn group homomorphisms and their properties.

Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
Jul-Oct	Unit-1, 2, 3, 4, 5 are due.			No classes have been taken for this Core
Jan	Unit-1 : Symmetries of a square, Dihedral groups, definition and examples of groups, definition and examples of groups including permutation groups and quaternion groups (through matrices), elementary properties of groups.	PD	04	Theoretical-08 Tutorial-02
	Unit-3 : Properties of cyclic groups, classification of subgroups of cyclic groups, Cycle notation for permutations, properties of permutations, even and odd permutations.	PD	06	
	Unit-2: Subgroups and examples of subgroups, centralizer, normalizer, center of a group, product of two subgroups.	BS	04	Theoretical-06 Tutorial-02
	Unit-4: External direct product of a finite number of groups.	BS	04	
	1 st Internal Assessment			
Feb	Unit-3 : Alternating group, properties of cosets, Lagrange's theorem and consequences including Fermat's Little theorem.	PD	03	Theoretical-08 Tutorial-02
	Unit-5: Group homomorphisms, properties of homomorphisms, Cayley's theorem, properties of isomorphisms, First, Second and Third isomorphism theorems.	PD	07	
	Unit-4: Normal subgroups, factor groups, Cauchy's theorem for finite abelian groups.	BS	06	Theoretical-04 Tutorial-02
	2 nd Internal Assessment			
Mar	Revision	BS PD	02 04	Theoretical-06 Tutorial-00
	End Semester Examination			
	Assessment: Internal Assessment & Assignment		Total: 42 Hrs	Theoretical-34 Tutorial-08

Books:

- David S. Dummit and Richard M. Foote, Abstract Algebra (<http://library.lol/main/36E6532B72807B9EF6B27E52E8C62CCC>) , Third Edition , Wiley pvt.Ltd.
- S. K. Mapa, Higher Algebra, Sarat Book Distributor, India 2019.

For CBCS courses

Lesson Plan for Course: B.Sc(H) Sem-III Code: MTMACOR07T Credit: 6

- Course Name: Numerical Methods
- Course coordinator: Pintu Debnath
- Course Outcomes:
 - CO-1. To learn algorithms of various numerical methods including their convergences and error.
 - CO-2. To find root of a algebraic an transcendental equation and matrix inverse by various numerical methods.
 - CO-3. To learn various types of interpolation methods and finite differences, and their application on numerical differentiation.
 - CO-4. To integrate numerically by several rules, and power method for determining eigen values.
 - CO-5. To solve ordinary differential equations by Euler's method and Runge-Kutta methods.

Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
Jul-Oct	Unit-1: Unit-2: Unit-3: Unit-4: Unit-5: Except <i>Power method</i> .			Course topics of these units have already been completed
Jan	Unit-5: The algebraic eigenvalue problem: Power method.	SM	02	Theoretical-04 Tutorial-02
	Unit-6: Ordinary Differential Equations: The method of successive approximations, Euler’s method, the modified Euler method, Runge-Kutta methods of orders two and four.	SM	04	
	1 st Internal Assessment			
Feb	Revision	SM	02	Theoretical-02 Tutorial-00
	2 nd Internal Assessment			
Mar	Revision	SM	04	Theoretical-04 Tutorial-00
	End Semester Examination			
	Assessment: Internal Assessment & Assignment		Total: 12 Hrs	Theoretical-10 Tutorial-02

Books:

- Brian Bradie, A Friendly Introduction to Numerical Analysis, Pearson Education, India, 2007.
- Mollah S. A. Numerical Analysis and Computational Procedures. Publisher Arunabha Sen Books and Allied (P) Ltd. 2018.
- Gupta R. K. Numerical Methods: Fundamentals and Applications. Cambridge University Press; 2019 May 9.

Lesson Plan for Course: B.Sc(H) Sem-III Code: MTMACOR07P Credit: 6

- Course name: Numerical Methods Lab
- Course coordinator: Pintu debnath
- Course Outcomes:
 - CO-1. To learn algorithms of various programming problems.
 - CO-2. Able to write C-programming of various methods to solve transcendental and algebraic equations.
 - CO-3. Able to write C-programming of various methods to solve system of linear equations and ODEs.
 - CO-4. Able to write C-programming for numerical integration and differentiation.
 - CO-5. Able to write C-programming of various methods to fitting a polynomial functions, Power method to find eigen values.

Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
Jul-Oct	Unit-1: Unit-2: Unit-3: Unit-4: Unit-5: Unit-6:			Course topics of these units have already been completed
Jan	Unit-5: Interpolation <i>a) Lagrange Interpolation</i> <i>b) Newton Interpolation</i> Unit-7: Method of finding Eigenvalue by <i>Power method</i> Unit-9: Solution of ordinary differential equations by: <i>a) Euler method</i> <i>b) Modified Euler method</i> <i>c) Runge Kutta method.</i>	SM	06	Theoretical-04 Tutorial-02
1 st Internal Assessment				
Feb	Unit-8: Fitting a Polynomial Function.	SM	03	Theoretical-02 Tutorial-01
2 nd Internal Assessment				
Mar	Revision	SM	04	Theoretical-04 Tutorial-00
End Semester Examination				
	Assessment: Internal Assessment & Assignment		Total: 13 Hrs	Theoretical-10 Tutorial-03

Books:

- Yashavant Kanetkar, Let Us C, BPB Publications, 2016.
- Kamthane AN. Programming in C, 2/e. Pearson Education India; 2011.
- Satbir Mehla, Vishakha Gupta, M.L. Jain, Amit Sehgal, New College Programming in C and Numerical Methods for B.A./B.Sc., Jeevansons Publications, India, Ninth Revised Edition, 2015

Lesson Plan for Course: B.Sc(H) Sem-III Code: MTMSSEC01M Credit: 6

- Course Name: C-Programming Language
- Course coordinator: Biswajit Sarkar
- Course Outcomes:
 - CO-1. Learn basic of high-level programming languages.
 - CO-2. To know about some arithmetic operators and logical operators to construct flowchart.
 - CO-3. Able to use for loop, while loop and do-while loop in C-programming.
 - CO-4. Able to use arrays and multi-dimensional arrays in C-programming.
 - CO-5. Capable to write programming by using functions.

Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
Jul-Oct	Unit-1: Basics of Computer Programming. Unit-2: Fundamentals of Programming. Unit-3: Statements.			Course topics of these units have been completed
Jan		SM	00	Theoretical-00 Tutorial-00
Feb	Unit-4: Arrays: Definition & requirement, declaration & initialization, indexing, one dimensional array: finding maximum, minimum, simple sorting and searching. Unit-5: Multi-dimensional arrays: Matrix Manipulations (Addition, Multiplication, Transpose) Arrays and Pointers, Memory allocation and deallocation: <i>malloc()</i> and <i>free()</i> functions. Unit-6: Functions: Why?, How to declare, define and invoke a function, Variables' scope, local & global variables and function parameters, Pointers, arrays as function parameters, <i>return</i> statement, Header files and their role. Illustrate different examples like swapping values, compute $n!$, nCr , find max/min from a list of elements, sort a set of numbers, matrix addition/ multiplication etc.	SM	06	Theoretical-04 Tutorial-02
End Semester Examination (By Department)				
	Assessment: Assignment		Total: 06 Hrs	Theoretical-04 Tutorial-02

Books:

- Yashavant Kanetkar, Let Us C, BPB Publications, 2016.
- Kamthane AN. Programming in C, 2/e. Pearson Education India; 2011.
- Satbir Mehla, Vishakha Gupta, M.L. Jain, Amit Sehgal, New College Programming in C and Numerical Methods For B.A./B.Sc., Jeevansons Publications, India, Ninth Revised Edition, 2015

Lesson Plan for Course: B.Sc(H) Sem-V Code: MTMACOR11T Credit: 6

- Course Name: Partial Differential Equations, Applications of Ordinary, Differential Equations
- Course coordinator: Biswajit Sarkar
- Course Outcomes:
 - CO-1. To conceptualize basic concepts of PDE, and able to solve different types of first order PDE.
 - CO-2. To classify second order linear PDE and transform into their canonical forms.
 - CO-3. To find out the solution of different types of initial and boundary value problems.
 - CO-4. To find solution of Cauchy problems of first order PDE including the method of separation of variables.
 - CO-5. To apply some application of ODE on particle dynamics like Central force, planetary motion, etc.

Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
Jul-Oct	Unit-1: Unit-2: Unit-3:			Course topics of these units have already been completed
Jan				Theoretical-09 Tutorial-03
1st Internal Assessment				
Feb	Unit 4: Central force. Constrained motion, varying mass, tangent and normal components of acceleration, modelling ballistics and planetary motion, Kepler's second law.	SM	06	Theoretical-05 Tutorial-01
2nd Internal Assessment				
Mar	Revision	PD SM	04 02	Theoretical-06 Tutorial-00
End Semester Examination				
	Assessment: Internal Assessment & Assignment		Total: 12 Hrs	Theoretical-11 Tutorial-01

Books:

- Tyn Myint-U and Lokenath Debnath, Linear Partial Differential Equations for Scientists and Engineers, 4th Edition, Springer, Indian reprint, 2006.
- S.L. Ross, Differential Equations, 3rd Ed., John Wiley and Sons, India, 2004.
- Martha L Abell, James P Braselton, Differential equations with MATHEMATICA, 3rd Ed., Elsevier Academic Press, 2004.
- Sneddon, I. N., Elements of Partial Differential Equations, McGraw Hill, 2013.
- Miller, F. H., Partial Differential Equations, John Wiley and Sons, 2013.
- Loney, S. L., An Elementary Treatise on the Dynamics of particle and of Rigid Bodies, Loney Press, 2007.

Lesson Plan for Course: B.Sc(H) Sem-V Code: MTMACOR12T Credit: 6

- Course Name: Group Theory II
- Course coordinator: Biswajit Sarkar
- Course Outcomes:
 - CO-1. To conceptualize some advance theoretical results like automorphism, inner automorphism, etc. on group and cyclic group.
 - CO-2. To know about characteristic subgroup, Commutator subgroup and its properties.
 - CO-3. To understand the direct product of groups and use it to prove fundamental theorem of abelian groups.
 - CO-4. To apply concepts and results of group actions to prove generalized Cayley's theorem and index theorem.
 - CO-5. To realize the beauty of Sylow's theorem and its applications to find simplicity of alternating group.

Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
Jul-Oct	Unit-1: Unit-2: Unit-3: Unit-4:			Course topics of this Core MTMACOR12T have already been completed
Jan	Revision	PD	04	Theoretical-04 Tutorial-00
1st Internal Assessment				
Feb	Revision	PD	04	Theoretical-04 Tutorial-00
2nd Internal Assessment				
Mar	Revision	PD	02	Theoretical-02 Tutorial-00
End Semester Examination				
	Assessment: Internal Assessment & Assignment		Total: 10 Hrs	Theoretical-10 Tutorial-00

Books:

- John B. Fraleigh, A First Course in Abstract Algebra, 7th Ed., Pearson, 2002.
- M. Artin, Abstract Algebra, 2nd Ed., Pearson, 2011.
- Joseph A. Gallian, Contemporary Abstract Algebra, 4th Ed., 1999.
- David S. Dummit and Richard M. Foote, Abstract Algebra, 3rd Ed., John Wiley and Sons (Asia) Pvt. Ltd., Singapore, 2004.
- J.R. Durbin, Modern Algebra, John Wiley & Sons, New York Inc., 2000.
- D. A. R. Wallace, Groups, Rings and Fields, Springer Verlag London Ltd., 1998
- D.S. Malik, John M. Mordeson and M.K. Sen, Fundamentals of Abstract Algebra, Tata McGraw Hill, 1997.
- I.N. Herstein, Topics in Algebra, Wiley Eastern Limited, India, 1975.
- S.K. Mapa, Higher Algebra, Sarat Book Distributor, India, 2019.

Lesson Plan for Course: B.Sc(H) Sem-V Code: MTMADSE01T **Credit: 6**

- Course Name: Linear Programming
- Course coordinator: Dr. Sudip Mondal
- Course Outcomes:
 - CO-1. To analyze and solve linear programming models of real life situations.
 - CO-2. To provide several methods for solving LPP including the concept of convex set and extreme points.
 - CO-3. To understand the theory of the transportation problem, assignment problems etc.
 - CO-4. To know about the relationships between the primal and dual problems.
 - CO-5. To learn about the applications to two-person zero-sum game problems.

Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
Jul-Oct	Unit-1: Unit-2:			Course topics of these units have been completed
Jan	Unit 3: Game theory: Formulation of two person zero sum games, solving two person zero sum games, games with mixed strategies, graphical solution procedure, linear programming solution of games.	BS	10	Theoretical-08 Tutorial-02
1 st Internal Assessment				
Feb				Theoretical-26 Tutorial-04
2 nd Internal Assessment				
Mar	Revision	BS	4	Theoretical-04 Tutorial-00
End Semester Examination				
	Assessment: Internal Assessment & Assignment		Total: 14 Hrs	Theoretical-12 Tutorial-02

Books:

- P.M.Karak, Linear programming and Theory of Games, ABS Publishing House, Kolkata-700007
- Mokhtar S. Bazaraa, John J. Jarvis and Hanif D. Sherali, Linear Programming and Network Flows, 2nd Ed., John Wiley and Sons, India, 2004.
- F.S. Hillier and G.J. Lieberman, Introduction to Operations Research, 9th Ed., Tata McGraw Hill, Singapore, 2009.
- Hamdy A. Taha, Operations Research, An Introduction, 8th Ed., Prentice-Hall India, 2006.
- G. Hadley, Linear Programming, Narosa Publishing House, New Delhi, 2002.

Lesson Plan for Course: B.Sc(H) Sem-V Code: MTMADSE03**T Credit: 6**

- Course Name: Probability & Statistics
- Course coordinator: Dr. Pintu debnath
- Course Outcomes:
 - CO-1. To understand the basic concepts of classical probability.
 - CO-2. To learn probability distribution and density function, and their properties with example.
 - CO-3. To understand Chebyshev's inequality and central limit theorem and their applications.
 - CO-4. To conceptualize random samples, sampling distributions and estimation of parameters.
 - CO-5. Able to solve the real life data-based problems by testing of hypothesis.

Course planner

Month	Course Topic	Teacher	Class-hour	Remarks*
Jul-Oct	Unit-1: Unit-2:			Course topics of these units have already been completed
Jan	Unit-3: Chebyshev's inequality, statement and interpretation of (weak) law of large numbers and strong law of large numbers. Central Limit theorem for independent and identically distributed random variables with finite variance.	SM	10	Theoretical-08 Tutorial-02
1 st Internal Assessment				
Feb	Unit-3: Markov Chains, Chapman-Kolmogorov equations, classification of states.	SM	03	Theoretical-02 Tutorial-01
	Unit-4: Random Samples, Sampling Distributions, Estimation of parameters, Testing of hypothesis.	BS	08	Theoretical-06 Tutorial-02
2 nd Internal Assessment				
Mar	Revision	BS SM	02 02	Theoretical-04 Tutorial-00
End Semester Examination				
	Assessment: Internal Assessment & Assignment		Total: 25 Hrs	Theoretical-20 Tutorial-05

Books:

- Robert V. Hogg, Joseph W. McKean and Allen T. Craig, Introduction to Mathematical Statistics, Pearson Education, Asia, 2007.
- Sheldon Ross, Introduction to Probability Models, 9th Ed., Academic Press, Indian Reprint, 2007.
- Alexander M. Mood, Franklin A. Graybill and Duane C. Boes, Introduction to the Theory of Statistics, 3rd Ed., Tata McGraw- Hill, Reprint 2007
- A. Gupta, Ground work of Mathematical Probability and Statistics, Academic publishers, 1983.
- A. Banerjee, S.K. De, S. Sen, Mathematical Probability, U.N.Dhur & Sons Pvt. Ltd., Kolkata-700073.
- S.K. De, S. Sen, Mathematical Statistics, U.N.Dhur & Sons Pvt. Ltd., Kolkata-700073.