



Date: 13th May, 2026

Entrance Test for PG Admissions (M.A. & M.Sc.)
For the Academic year 2026-2027

SVKM'S Mithibai College will be conducting an Entrance Test for Post-Graduate Admissions to their PG Programme for UG-Third Year appeared / Passed Candidates.

Candidates will be required to attempt a Computer Based Test at Mithibai College for **100 questions (1 mark each) in a time duration of 100 minutes.**

The candidate has to ensure that they have read all the instructions & eligibility criteria before registering. Registration for filing up the Common Entrance Test online Admission form for the Mithibai College (Empowered Autonomous) website homepage (www.mithibai.ac.in) or <https://sdcappscs.svkm.ac.in:44300/irj/portal>

The following are the Programmes for which admission will be based on the Mithibai Entrance Test.

1. Master of Arts (Economics)
2. Master of Arts (English)
3. Master of Arts (Psychology)
4. Master of Science (Biotechnology)
5. Master of Science (Botany)
6. Master of Science (Organic Chemistry)
7. Master of Science (Analytical Chemistry)
8. Master of Science (Computer Science)
9. Master of Science (Data Science and Artificial Intelligence)
10. Master of Science (Biochemistry)
11. Master of Science (Mathematics)
12. Master of Science (Microbiology)
13. Master of Science (Physics)
14. Master of Science (Statistics) (Applied Statistics and Data Analytics)
15. Master of Science (Zoology)

m.w.ridge



Shri Vile Parle Kelvani Mandal's
Mithibai College of Arts, Chauhan Institute of Science and
Amrutben Jivanlal College of Commerce and Economics

Empowered Autonomous - Affiliated to University of Mumbai



NAAC Accredited A⁺⁺ Grade, CGPA: 3.55 (November 2024)

Best College (2016-17), University of Mumbai

DATES FOR THE REGISTRATION AND EXAMINATION:

Sr. No.	Particular	Dates
1	Online registration	15 th May, 2026 to 31 st May, 2026
2	Conduct of Online Computer-based test at Mithibai College	From 4 th June, 2026 onwards. Detailed time table will be displayed in due course of time.
3	Date of Interviews	On the date of the Online Examination

Basis of Merit list generation	
Entrance Exam Score	60%
Interview Score	20%
Degree Marks- Total of Semester I to Semester VI OR Semester I to V (if Semester VI result not yet declared)	20%

PROVISION FOR PHYSICALLY CHALLENGED CANDIDATES:

The candidates must upload their Disability Certificate at the time of online registration (Recent) and complete the payment.

This will be reviewed, approved and confirmed to the candidate so that appropriate assistance will be made available at the test centre.

THERE WILL BE NO PROVISION FOR LEARNING DISABILITY CANDIDATES.

ONLINE REGISTRATION FEES:

Sr. No.	Test	Examination Fees
1	Mithibai Entrance Test	₹. 1000/-

Note: If a candidate is applying for more than 1(one) program, for example, Organic Chemistry & Analytical Chemistry, then they have to pay additional amount of ₹.100/- for the additional program of Analytical Chemistry & ₹.100/- for Industrial Chemistry.

K. Desai
Prof. Krutika B. Desai
Principal



Shri Vile Parle Kelvani Mandal's
Mithibai College of Arts, Chauhan Institute of Science and
Amrutben Jivanlal College of Commerce and Economics



Empowered Autonomous - Affiliated to University of Mumbai

NAAC Accredited A++ Grade, CGPA: 3.55 (November 2024)
Best College (2016-17), University of Mumbai

Syllabus for M.A.(ECONOMICS) Entrance Test 2026- 2027

Sr. No.	Topics
1.	Microeconomics- Consumer's & Producer's Behaviour, Market Structures, General Equilibrium and Welfare analysis
2.	Macroeconomics- Classical & Modern Theories of Money, Output and Employment, National Income Accounting, Business cycle, Inflation, AD & AS Model, IS & LM Model.
3.	International Trade – Classical & modern theories, Balance of Payments, Foreign exchange market and Determination of exchange rate
4.	Indian economy- Structure of Indian economy, Indian monetary and financial systems.
5.	Economics of Growth and Development – Concept of Development, Growth Models.
6.	Public Economics- Sources of Public revenue, Theories of Taxation, Public Expenditure, Public Borrowing & different concepts of Deficits.
7.	Quantitative tools for Economics – Statistics – Mean, Median, Mode, Standard Deviation, Correlation, Regression and Probability.
8.	Mathematics – First order and Second order derivatives, matrices, Definite and indefinite integrals.
9.	Econometrics – Classical Linear Regression Model and its assumptions.

Mai
-
17/04/26



Shri Vile Parle Kelvani Mandal's
Mithibai College of Arts, Chauhan Institute of Science and
Amrutben Jivanlal College of Commerce and Economics



Empowered Autonomous - Affiliated to University of Mumbai

NAAC Accredited A++ Grade, CGPA: 3.55 (November 2024)
Best College (2016-17), University of Mumbai

Syllabus for M.A. English Entrance Test 2026-27

Sr. No.	Topics
	Literature:
1.	Chaucer to Shakespeare
2.	Romantic Period
3.	Victorian Period
4.	Modern Period
5.	Contemporary Period
6.	History of English Language
7.	English Language Teaching
8.	Indian Writing in English
9.	Indian Literature in English Translation
10.	Contemporary British literature
11.	Modern British Literature
12.	American and other non-British English Literature
13.	Contemporary Theory
14.	Literary Theory and Criticism
	Language:
1.	Parts of speech Tenses
2.	Vocabulary
3.	Logical fallacy
4.	Modals
5.	Active and passive voice
6.	Direct and indirect speech
7.	Types of sentences and their structuring
8.	Subject-verb agreement
9.	Articles
10.	Synonyms and antonyms
11.	Idioms and phrases
12.	Comprehension passages and questions based on them

P. Mithibai
18/04/26



Shri Vile Parle Kelvani Mandal's
Mithibai College of Arts, Chauhan Institute of Science and
Amrutben Jivanlal College of Commerce and Economics

Empowered Autonomous - Affiliated to University of Mumbai



NAAC Accredited A++ Grade, CGPA: 3.55 (November 2024)
Best College (2016-17), University of Mumbai

M.A. (Psychology – Industrial/Organizational Psychology)
Syllabus – Entrance Exam 2026-27

Sr. No.	Topics
1.	Industrial/Organizational Psychology
2.	Social Psychology
3.	Cognitive Psychology
4.	Personality Psychology
5.	Psychological Testing
6.	Motivation and Emotions
7.	Counseling Psychology
8.	Human/Lifespan Development
9.	Foundations of Psychology
10.	Research Methodology and Statistics
11.	Abnormal Psychology

K. Adhikari

Head,

Department of Psychology



Shri Vile Parle Kelvani Mandal's
Mithibai College of Arts, Chauhan Institute of Science and
Amrutben Jivanlal College of Commerce and Economics



Empowered Autonomous - Affiliated to University of Mumbai

NAAC Accredited A++ Grade, CGPA: 3.55 (November 2024)

Best College (2016-17), University of Mumbai

Syllabus for M.Sc. (Biotechnology) Entrance Test 2026- 2027

Sr. No.	Topics
1.	Molecular Biology: Nucleic acids- types, structure, genomes, DNA replication, central dogma, molecular mechanisms involved in transcription, translation and protein synthesis, mutations and repair, genes, transposons, operons
2.	Microbiology: Classification of Microbial kingdom, cell structure, characteristic features, growth, nutrition, multiplication, interactions, pathogenic and non pathogenic microbes, microbe - human interactions; Fundamentals of Medical microbiology; diagnostics.
3.	Cytology: Ultra structure of prokaryotic and eukaryotic cells, enzymes and their activities in the cell, cell dynamics, cellular communication and transport, techniques, cancer biology.
4.	Chemistry and Biochemistry: Water, Acid base balance, Buffers, Preparation of Solutions, Biomolecules, Carbohydrate, protein and lipid metabolism, disorders associated with metabolic pathways, enzymology, vitamins and Endocrinology, analytical techniques.
5.	Genetics: Genetics & Heredity, genetic mapping, Human Genetics, laws of heredity, Population genetics
6.	Industrial Biotechnology: Fermentation Technology, Food Biotechnology, Dairy Biotechnology, Role of Biotechnology in Agriculture, Healthcare and Pharmaceuticals. Vaccine technology
7.	Recombinant DNA Technology: Gene Cloning, enzymes and vectors in cloning, PCR, genome manipulation, DNA typing, molecular diagnostics, gene therapy, genetic counselling, Human Genome Project, Genetic Engineering, Transgenics
8.	Immunology: Cells of immune system, over view of immune response, mediators of immune system, antigens and immunogens, immunological methods and applications, disorders.
9.	Allied Areas: Animal Tissue Culture, Plant Tissue Culture, Environmental Biotechnology, Bioinformatics, Biostatistics, Biophysics, Instrumentation, Intellectual Property Rights, Bioethics.
10.	Basic English language and Essential mathematical abilities

Dr. Shubhada Walvekar
Head,
Department of Biotechnology



Department of Botany

Master of Science Entrance Exam Syllabus – 2026-2027

Sr. No	Topics
1.	Algae –General characters of Chlorophyceae; <i>Nostoc</i> , <i>Spirogyra</i> , <i>Ulothrix</i> , <i>Chlamydomonas</i> , <i>Vaucheria</i> , <i>Batrachospermum</i> , <i>Polysiphonia</i>
2.	Fungi – Economic importance of fungi, <i>Rhizopus</i> , <i>Albugo</i>
3.	Plant pathology – Causal organisms, Control measures
4.	Lichens – Types of lichens, Economic importance
5.	Bryophyta – <i>Riccia</i> , <i>Marchantia</i>
6.	Pteridophyta – <i>Selaginella</i> , <i>Lycopodium</i> , <i>Marselia</i>
7.	Paleobotany – <i>Asteroxylon</i> , <i>Calamites</i> , <i>Pentoxylon</i> , <i>Lyginopteris</i> , <i>Lepidodendron</i> , Birbal Sahni Research institutes
8.	Gymnosperms – <i>Pinus</i> , <i>Gnetum</i> , Economic importance of Gymnosperms
9.	Angiosperms- Types of inflorescence, Morphology of flowers and fruit, Families, Herbarium, Botanical gardens, BSI,
10.	Cell biology – Prokaryotic and Eukaryotic cells, Chloroplast, Nucleus
11.	Ecology- Primary productivity, Different types of ecosystem, soil, Phytoremediation, Biological and chemicals
12.	Anatomy – Different types of tissues, mechanical tissues, vascular bundles, Secondary growth
13.	Physiology – Photosynthesis and photophosphorylation, Florien, vernalization, plant and water relations
14.	Medicinal plants – Uses and active constituents
15.	Instrumentation – Chromatography, Calorimeter,
16.	Genetics – Chromosomes, mitosis, meiosis, mutation, DNA
17.	Economic importance of plants – Spices, Condiments
18.	Horticulture – Branches of horticulture, garden features
19.	Biostatistics – Anova, t-test, Chi-square, Correlation coefficient
20.	Ethnobotany
21.	Pharmacognosy
22.	Biochemistry - Antioxidants
23.	Herbal Cosmetics


Dr. Bindu Gopalkrishnan
Head Department of Botany



Syllabus for MSc Chemistry

Entrance TEST 2026-2027

Sr. no	Topic
1.	Physical chemistry Thermodynamics, Phase rule, Nuclear chemistry, Electrochemistry, Chemical kinetics, Solid state chemistry, Spectroscopy, Quantum chemistry, Polymers, Catalysis and Chemical calculations.
2.	Organic chemistry Organic spectroscopy, Organic reactions, Stereochemistry, Organic synthesis, Industrial Chemistry, Fats and oils, Hybridization, Organic reactive intermediates, Heterocyclic chemistry, IUPAC, Pericyclic chemistry, Polymer chemistry, Biomolecules and Natural products.
3.	Inorganic chemistry Acid base theories, Periodic table and periodicity of elements, Atomic structure, Qualitative analysis, Chemistry of transition and inner elements, Chemistry of p block elements, Chemical Bonding, Coordination Chemistry, Superconductors, Organometallic chemistry, Nanotechnology, Bioinorganic Chemistry, Oxidation and reduction and Molecular symmetry
4.	Analytical chemistry Electroanalytical technique, Ion selective electrode, Polarography, Amperometry titration, Titrimetric analysis viz .Acid Base, Complexometric, Precipitation and Redox titration, Chromatography, Treatment of Analytical data, Sampling, Quality management, GLP and ISO.

Dr. Aparna S Bhardwaj,
Head, Department of Chemistry,
Mithibai College (Empowered Autonomous)



Syllabus For
M.Sc Computer Science
Entrance Examination (2026-27)

Sr. No.	Topics
1.	Logical Reasoning and Analytical Skills
2.	Programming in Python : Basic Commands, Variables, Data Types, Control Structure, Loops, Function
3.	Computer Networks: network benefits and its types OSI, TCP/IP models, Address classes, classless addresses, network parameters, Types of Topologies.
4.	Operating System: Structure of OS, PCB, types of OS, Process management, Memory Management, File management, Linux Commands
5.	Data Structure: Algorithm Complexity, Stack, Queue, Linked List, Tree, Graphs, Sorting - Insertion, Selection, Bubble, Merge, Quick
6.	Database: Mysql queries (DML , DDL statements) , ER diagram, normalization (1NF,2NF and 3NF) , PL/SQL - Variables, Cursor, Concurrent Transactions
7.	Computer Organization and Digital Electronics: numbers system, Combinational and sequential circuits, memory organization, cache memory, Adders, MUX and DEMUX, CPU concepts.
8.	Software Engineering: SDLC, software vs hardware, process of software, Basic SDLC Models, UML and Basic Testing concepts.
9.	C Programming: Variables, Data Types, Control Structure, Loops, Function, Array, Pointers
10.	Statistics: Basic Concepts, Distributions, Probability, Hypothesis Testing
11.	Linear Algebra: Basic Concepts, Matrix Operations, Equation solving

Dr. Ashish Gavande

Head, Department of Computer Science



Syllabus - M.Sc Data Science and Artificial Intelligence

Entrance Examination (2026-27)

Sr. No.	Topics
1.	Logical Reasoning and Analytical Skills
2.	Programming in Python : Basic Commands, Variables, Data Types, Control Structure, Loops, Function
3.	Computer Networks : network benefits and its types OSI, TCP/IP models, Address classes, classless addresses, network parameters, Types of Topologies.
4.	Operating System : Structure of OS, PCB, types of OS, Process management, Memory Management, File management, Linux Commands
5.	Data Structure : Algorithm Complexity, Stack, Queue, Linked List, Tree, Graphs, Sorting - Insertion, Selection, Bubble, Merge, Quick
6.	Database : Mysql queries (DML , DDL statements) , ER diagram, normalization (1NF,2NF and 3NF) , PL/SQL - Variables, Cursor, Concurrent Transactions
7.	Computer Organization and Digital Electronics : numbers system, Combinational and sequential circuits, memory organization, cache memory, Adders, MUX and DEMUX, CPU concepts.
8.	Software Engineering : SDLC, software vs hardware, process of software, Basic SDLC Models, UML and Basic Testing concepts.
9.	C Programming : Variables, Data Types, Control Structure, Loops, Function, Array, Pointers
10.	Statistics : Basic Concepts, Distributions, Probability, Hypothesis Testing
11.	Linear Algebra : Basic Concepts, Matrix Operations, Equation solving

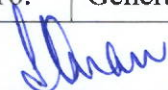
Dr. Ashish Gavande

Head, Department of Computer Science



Syllabus for M.Sc. (Biochemistry) Entrance Test (2026-27)

S. No.	Topic	Sub-topics
1.	Biomolecules	Carbohydrates, Amino acids, proteins, Lipids, Nucleic acid
2.	Basic genetics	Mendel, Non Mendel, Chromosomal structure
3.	Physiology	Digestion & Absorption, Excretion , Respiration, Nervous system , Muscular system, Endocrinology
4.	Biotechnology & Microbiology	Prokaryotic cellular structure, Fermentation, Bioremediation, Enzyme Immobilization, ATC & PTC
5.	Molecular Biology, RDT and Cell biology	Replication, Transcription, Translation, RDT, Cell cycle
6.	Immunology, Pathophysiology	Basics of immunology Antigen-Antibody interaction, Virology, In born errors , Aging
7.	Biostatistics & Bioinformatics	Central tendency, Partition values, Measures of dispersion, Basics of Bioinformatics
8.	Analytical techniques	Centrifugation, Electrophoresis, Microscopy , Chromatography, Spectrophotometry
9.	Metabolism and Enzymology	Carbohydrates, Lipid, Protein, Bioenergetics, Basics of enzymology
10.	Chemistry	Basics of organic chemistry
11.	Pharmacology	Pharmacokinetics, Pharmacodynamics, Routes and dosage form
12.	Nutrition & Dietetics	Major & minor nutrients, Balanced diet
13.	Transport Mechanisms and Cancer Biology	Transport mechanisms, Cancer Biology Oncology
14.	Environmental science + ecology	Pollution of -Air, water, soil; noise pollution, Energy,- conventional and non-conventional, sustainable development+-
15.	Introduction to microbiology + cell biology+ Cell division	Basic microbiology, Eukaryotic cell organelles, Mitosis, Meiosis
16.	General basic Mathematics	


Dr. Sara Khan 16.4.26
Head, Department of Biochemistry



2026-27 Entrance Test Syllabus

Sr No.		
1	Discrete Mathematics	Set Theory, Basics of Probability, Functions, Relations, permutations and combinations, Pigeonhole principles, inclusion-exclusion principles, Integers, divisibility, GCD and LCM and congruences
2	Calculus	Limits and Continuity of function over \mathbb{R} , Differentiation and Applications of Differentiation, Taylor's Theorem, Extreme Value of Functions, Partial derivatives, functions of several variables, limits, continuity and derivatives for scalar fields and vector fields.
3	Real Analysis	Real numbers and its properties, Sequence of real numbers, Series of real numbers, Riemann Integration Application of Riemann Integration and Improper integrals
4	Analysis	Basics of Fourier Series, Topology of Metric Spaces, Convergence, Complete metric spaces, Continuous functions on metric spaces, Connected Metric Spaces, Compact Metric Spaces
5	Linear Algebra	Vectors and its properties, Vector Space over R , Linear Transformations, System of linear equations, Determinant, Matrices, Eigenvalues and Eigen vectors, Diagonalisation of matrices , Inner Product Spaces and Orthogonal Linear Transformations, Quotient Spaces
6	Algebra	Groups, Subgroups and Cyclic Groups, Permutation Group, Cosets and Lagrange's Theorem, Group Homomorphisms and Isomorphisms
7	Integral Calculus	Line Integral, Double Integral, Triple Integral Surface Integral, Stokes' Theorem, Gauss' Divergence Theorem,
8	Complex Numbers and its properties	Introduction to complex numbers $z = a + ib$, real and imaginary parts , Algebra of complex numbers, Conjugate of a complex number and its properties , Modulus, argument and its properties, Argand plane, Polar form of complex numbers, Properties of complex numbers , De Moivre's Theorem and its applications
9	Numerical Methods	Bisection method, Regula-Falsi method, Newton-Raphson method, interpolation
10	Ordinary Differential Equations	Definition of Differential equations, degree and order, variable separable method, homogenous differential equations, first order differential equations, Exact and non-exact differential equations

Dr. Prabhat Dwivedi
Head,

Department of Mathematics



SYLLABUS IN MICROBIOLOGY FOR THE ENTRANCE TEST FOR POST-GRADUATE ADMISSIONS, 2026-27

The following topics will be covered at the entrance exam for post-graduate admissions.

1.	Basic microbiology- History of Microbiology, size, shape, arrangement, ultrastructure of bacteria, structure of an eukaryotic cell.
2.	Microscopy – Parts of compound microscope with function, Types of Microscopy - fluorescence, electron, phase contrast.
3.	Staining - Theory of staining, various types of stains, Simple staining, differential staining, special staining.
4.	Groups of microorganisms - various groups of microbes with characteristics of habitats and significance.
5.	Growth, Cultivation and Enumeration - Theory of microbial growth, methods to measure growth, enumeration techniques.
6.	Instrumentation – pH meter, colorimeter, UV-visible spectrophotometer, centrifuge, chromatographic methods.
7.	Environmental microbiology - Air, water, sewage, marine microbiology, methods and techniques used in environmental microbiology.
8.	Food microbiology - Food as a substrate for growth of microbes, intrinsic and extrinsic factors affecting growth, microbial spoilage of food, methods to detect and enumerate microbes in food.
9.	Immunology- Types of immunity, types of immune cells, humoral and cell mediated immunity, types of antibodies, antigen-antibody reactions, complement system, immunological techniques, MHC complex and MHC molecules, vaccines.
10.	Medical microbiology- Various diseases caused by microbes, identification of pathogens, epidemiology, pathogenesis and treatment, chemotherapeutic agents.
11.	Microbial Genetics –DNA replication, gene transfer mechanisms in bacteria, mutation and repair.
12.	Molecular biology- rDNA technology and its applications.
13.	Industrial microbiology - Primary and secondary screening of microbes for various metabolites, Types of fermentation, Media, Inoculum development, scales-up, Design of a Fermenter, Fermentation process for obtaining microbial products- beverages, antibiotics, vitamins, vinegar, mushroom production, SCP, downstream processing, effluent treatment.
14.	Microbial biochemistry-Biomolecules- carbohydrates, lipids, amino acids, proteins, thermodynamics with respect to biological systems, transcription and translation processes, carbohydrate metabolism of prokaryotes.



15.	Virology- Classification of viruses, structure of bacteriophages, types of bacteriophages, cultivation of viruses, methods for detection and enumeration of viral particles, prions and viroids.
16.	Classification of micro-organisms- Binomial nomenclature, Whittaker's five kingdom and Carl Woe's three kingdom classification, Types of microorganisms- Archaeobacteria, Actinobacteria, Rickettsia, Chlamydia.
17.	Enzymology – Enzymes-function, properties, units, classification, enzyme kinetics, kinetics of multi-substrate reactions, enzyme inhibition, enzyme regulation.
18.	Intellectual property and patenting- Types of IPR, Patents- pre-requisites, process of filing a patent, types of patents, Patenting of Microbes, Plant Varieties Protection Act.
19.	Biotechnology - Electrophoretic techniques DNA sequencing methods - Maxam and Gilbert, Chain termination and automated sequencing, hybridization technique Biological fuels – biogas and bioethanol production Bioremediation – Biofertilisers and pesticides Genetically Modified Organisms Basics of tissue culture techniques


Dr. Mrunalini Sambhare.



Shri Vile Parle Kelvani Mandal's
Mithibai College of Arts, Chauhan Institute of Science and
Amrutben Jivanlal College of Commerce and Economics



Empowered Autonomous - Affiliated to University of Mumbai

NAAC Accredited A++ Grade, CGPA: 3.55 (November 2024)
Best College (2016-17), University of Mumbai

Syllabus for MSc Physics entrance Test-2026-27

Sr. No.	Topics
1	Basic Mechanics and Special Theory of Relativity - Newton's laws of motion and applications, Velocity and acceleration in Cartesian, polar and cylindrical coordinate systems, Postulates of special relativity. Lorentz transformations. Length contraction, time dilation. Relativistic velocity addition theorem, mass energy equivalence
2	Waves and Optics: Superposition of two or more simple harmonic oscillators. Damped and forced oscillators, resonance. Wave equation, traveling and standing waves in one-dimension. Energy density and energy transmission in waves. Interference, Diffraction, Polarization, Interferometry, Optical Instruments
3	Modern Physics and Quantum Mechanics- Blackbody radiation, photoelectric, Compton effect, Bohr's atomic model, X-rays. Duality, Uncertainty principle, the superposition principle Formalism, Schrodinger equation and its application to bounded and unbounded system.
4	Electricity and Magnetism- Coulomb's law, Gauss's law. Electric field and potential. Electrostatic boundary conditions, Solution of Laplace's equation for simple cases. Conductors, capacitors, dielectrics, dielectric polarization, volume and surface charges, electrostatic energy. Biot-Savart law, Ampere's law, Faraday's law of electromagnetic induction, Self and mutual inductance. Alternating currents.
5	Thermodynamics- Elements of Kinetic theory of gases. Velocity distribution and Equipartition of energy. Specific heat of Mono-, di- and tri-atomic gases. Ideal gas, van-der-Waals gas and equation of state. Mean free path. Laws of thermodynamics.
6	Analog and Digital Electronics-Basic Electronics, Diode, Transistor, OPAMP, Digital Electronics, Timers and counters.
7	Atomic and Molecular Physics-Hydrogen atom, Angular Momentum, Spin Orbit Coupling, Molecular Spectra and Interaction with Photons.
8	Classical Mechanics- Rigid body motion, fixed axis rotations, rotation and translation, moments of Inertia and products of Inertia, parallel and perpendicular axes theorem. Principal moments and axes. Kinematics of moving fluids, equation of continuity, Euler's equation, Bernoulli's theorem
9	Electrodynamics- Displacement current, Maxwell's equations and plane electromagnetic waves, Poynting's theorem, reflection and refraction at a dielectric interface, transmission and reflection coefficients. Lorentz Force and motion of charged particles in electric and magnetic fields
10	Solid State Physics- and Nuclear Physics: Crystal Physics, Electrical and Magnetic Properties, Band theory, Superconductivity, Semiconductors. Radioactive Decay, Properties of Nucleus, Nuclear Models, Nuclear Energy, Detectors and Accelerators.
11	General Mathematical Aptitude

Shri

Head : Department of Physics
Mithibai College,
Vile Parle (W),
Mumbai - 400056.



M.Sc. Applied Statistics & Data Analytics

2026-27 Entrance Test Syllabus

Sr. No.	Topics
1.	Descriptive Statistics: Types of Data and Tabulation. Classification of Data and Measures of Central Tendency, Measures of Dispersion, Skewness & Kurtosis, Correlation & Regression, Time Series, Index Numbers.
2.	Statistical Methods: Probability random variables and their Properties Standard Univariate Discrete Distributions, Standard Continuous Distributions. Sampling Distributions, Estimation: Properties and types, Large Sample Tests. Testing of Hypothesis, MP UMP tests LRT, SPRT, Non-Parametric Tests. Properties & Applications of Chi-square, t and F Distributions. Interdependence of Normal, Chi-square, t, F distributions. Order Statistics,
3.	Moment Generating Function, Cumulant generating function, Characteristic Function, Joint Moment Generating Function, Probability Generating Function. Bivariate Distributions & Transformation of Variables, Trinomial & Multinomial Distribution, Bivariate Normal distribution. Chebychev's Inequality, Convergence in probability and Limit theorems.
4.	Sampling Concepts and Simple Random Sampling for Variables and Attributes. Ratio and Regression methods. Concepts of Systematic, Cluster, Multiple Stage Sampling. Indian Statistical agencies and their functions. Stratified Random Sampling.
5.	Applied Statistics1: Control Charts, Acceptance Sampling, CPM-PERT, Linear Programming Problem (L.P.P.), Integer Programming Problem (IPP): -Sensitivity Analysis, Decision Theory, Inventory Control, Replacement, Information Theory, Simulation. Queuing Theory.
6.	Applied Statistics2: Epidemic models, Bioassay, clinical trials, bioequivalence. Mortality Tables Compound Interest and Annuities Certain, Life Annuities, Assurance Benefits, Linear model, Multiple and partial regression, Vital Statistics, Reliability
7.	ANOVA:ONE Way Two-Way, Design of Experiments: CRD, RBD, LSD, Factorial Designs.
8.	Fundamentals of R, Descriptive Statistics using R, Probability Distributions and Correlation and Regression (Using R and MS Excel)..
9.	Stochastic Processes, Introduction to Markov Chains.
10.	Basics of Differentiation, Integration, Matrix, Series, Limits, Permutations, Combination, Indices.

Manjiri Vartak

Mrs. Manjiri Vartak
Head, Department of Statistics



Shri Vile Parle Kelvani Mandal's
Mithibai College of Arts, Chauhan Institute of Science and
Amruthben Jivanlal College of Commerce and Economics



Empowered Autonomous - Affiliated to University of Mumbai

NAAC Accredited A++ Grade, CGPA: 3.55 (November 2024)

Best College (2016-17), University of Mumbai

Syllabus for M.Sc. (Zoology) Entrance Test 2026-27

Sr. No.	Topics
1.	Comparative Study: Nutrition, Excretion, Respiration, Circulation, Nervous system and Reproduction, Integumentary system
2.	Ecosystem, Biodiversity, National parks and sanctuaries, Population Ecology, Pollution and its Effect on Organisms, Environment and Wildlife Management, Wildlife Photography
3.	Genetics & Heredity, Evolution, Zoogeography
4.	Incredible Animal World, Ethology
5.	Haematology, Human Genome Project, Immunology, Mammalian Histology, Basic Toxicology, General Pathology. Human Osteology, Limb Muscles, Work Physiology
6.	Entrepreneurial Zoology, Applied Zoology (Aquaculture, Sericulture, Lac culture, Poultry, Dairy, Goat and Sheep Farming), Fishery Biology
7.	Developmental Biology of Chick, Comparative Embryology
8.	Cytology & Biomolecules, Enzymology, Homeostasis, Endocrinology, Animal Tissue Culture, Molecular Biology, Genetic Engineering, Human Genetics
9.	Scientific Writing, Biostatistics, Bioinformatics
10.	Forensic Science, Forensic Entomology

Mr. T.V. Bicheesh Balan
Head, Department of Zoology