



“Sheel, Sharir, Adhyayan”
Aundh Shikshan Mandal, Aundh

RAJA SHRIPATRAO BHAGAWANTRAO
MAHAVIDYALAYA, AUNDH (SATARA)

INTERNAL QUALITY ASSURANCE CELL

**PROGRAM OUTCOME, PROGRAM SPESIFIC OUTCOME AND COURSE
OUTCOME**

Paper XVI: Analytical Chemistry

By the end of this Course students should be able to know about:

1. The students will be able to understand the concept of analytical chemistry.
2. The students will be able to understand the procedure of potentiometric titration and their application.
3. Students will understand basics of colorimetry and spectrophotometry.

B.Sc. (Botany)

Program Specific Outcomes

1. The student will graduate with proficiency in the subject of his choice.
2. The student will be eligible to continue higher studies in his subject.
3. The student will be eligible to pursue higher studies abroad.
4. The student will be eligible to appear for the exams for jobs in government organizations.
5. The student will graduate with proficiency in Plant Sciences.
6. The student will be eligible to continue higher studies in Botany both in India and abroad.
7. The student will be able to understand the plant diversity around him or her and will be in a position to create career opportunity in the field of plant sciences.
8. The student will be eligible to appear for the exams for jobs in government organizations like UPSC, MPSC, IFS, Banking sector etc.
9. The student will prove useful in the knowledge, development and management of plants in the Western Ghats.
10. The student will be able to be a part of a skilled workforce to match the requirements of the society especially for dealing with the biodiversity and environment related problems in the society.

Course Outcomes: B.Sc. I

Paper I: Viruses, bacteria, Algae And Fungi.

By the end of this Course students should be able to know about:

1. Understand the diversity among Viruses, Bacteria, Algae and Fungi.

2. Create interest in bio-industries
3. Know the systematic, morphology and structure, of Bacteria, Viruses and Algae.
4. Developing skill of identification algae, fungi, bacteria's and viruses.
5. Understand the useful and harmful importance of Bacteria, Viruses and Algae

Paper II: Biodiversity of archegoniate.

By the end of this Course students should be able to know about:

1. Understand the diversity among archegoniate salient features of each group with reference to example
2. Understand the morphological diversity of Bryophytes, pteridophytes and gymnosperms.
3. Understand the economic importance of gymnosperms.

Paper III: Plant Ecology

By the end of this Course students should be able to know about:

1. Student know about ecological terms, ecosystem community, ecological groups of plants and their adaptations, phytogeography.

Paper IV: Plant Taxonomy

By the end of this Course students should be able to know about:

1. Student becomes familiar with basic science Plant taxonomy includes nomenclature, classification and herbarium techniques.
2. Student knows about advanced plant group angiosperms with reference to some families.

Course Outcomes: B.Sc. II

Paper V: Algae, fungi, Bryophytes and industrial applications.

By the end of this Course students should be able to know about:

1. Students become familiar with non-vascular plants with classical examples of each.

2. Learn the industrial applications of various plants and plant products such as biofertilisers, mushroom cultivation techniques.
- 3.

Paper VI: Plant physiology ecology and horticulture.

By the end of this Course students should be able to know about:

1. Know importance and scope of plant physiology.
2. Understand the plants and plant cells in relation to physiological process growth; know about role of phytohormones in plants.
3. Students become familiar with scope and branches of horticulture, methods of propagation of horticulture plant.

Paper VII: Pteridophytes, Gymnosperms, angiosperms and plant anatomy.

By the end of this Course students should be able to know about:

1. Students become familiar with vascular plants with classical examples of each.
2. Students understand the anatomy of angiosperms.

Paper VIII: Cytogenetic and utilization of plant resources.

By the end of this Course students should be able to know about:

1. Understand structure of cell, cell organ allies, genetical process such as phenomenon of linkage and recombination.
2. Students become familiar with different plant resources, some medicinal plants with classical examples.

Course Outcomes: B.Sc. III

Paper IX: Biology of non-vascular plants.

By the end of this Course students should be able to know about:

1. Students become familiar with non-vascular plants with classical examples of each.
2. To know the geological time scale, process of carbon dating, application of pale botany in oil and coal exploration.
- 3.

Paper X: Genetics and analytical techniques in plant science.

By the end of this Course students should be able to know about:

1. Understood chromosome structure, number, mutation and population genetics.
2. To know extra chromosomal inheritance in plastid and mitochondria.
3. Students become familiar with analytical techniques in plant sciences.

Paper XI: Fundamentals of plant physiology and ecology.

By the end of this Course students should be able to know about:

1. To understand plant life processes mineral nutrition, nitrogen metabolism Photosynthesis and respiration.
2. To understood the concept of population ecology and biogeochemical cycles.

Paper XII: Plant biochemistry.

By the end of this Course students should be able to know about:

1. To understand the biochemistry of carbohydrate, lipid, protein and nucleic acid.
2. Understood biochemical processes and their significance in plants.

Paper XIII: Biology of vascular plants.

By the end of this Course students should be able to know about:

1. Students become familiar with vascular plants and their significance.
2. Understood modern taxonomy in relation to paynology, anatomy and cyto-taxonomy in plants.

Paper XIV: Microbiology and plant pathology.

By the end of this Course students should be able to know about:

1. Students become familiar with methods used in microbiology for isolation, culture methods, staining methods and their industrial applications.
2. To understand structure of different microbes and their genetics.
3. To become familiar with plant diseases.

Paper XV: Plant breeding biostatistics ethno botany and horticulture.

By the end of this Course students should be able to know about:

1. To understand by using modern plant breeding techniques.
2. Students become familiar with role ethno botany in modern medicine.
3. To understand applications of biostatistics in plant sciences.
4. Students becomes familiar with horticulture techniques such as gardening, ornamental plants and nursery management.

Paper XVI: Molecular biology and biotechnology.

By the end of this Course students should be able to know about:

1. To understand DNA structure, replication and gene action
2. Students become familiar with DNA recombinant technology, finger printing, PCR technique and construction of genomic library.
3. Students become familiar with gene transfer methods and tissue culture techniques.

B.Sc. (Physics) Program Specific Outcomes

1. Identifying and describing physical systems with their professional knowledge.
2. Developing their scientific attitude, ability and techniques to tackle problems either theoretical or experimental in nature.
3. Knowledge of general physics like sound, wave, friction, forces and laws of motion and use of mathematics.
4. Information of electrical current, circuits, construction and their use.
5. Learning about concepts of nuclear physics and nuclear energies and importance of their use for mankind.
6. Knowing about the light and its importance in life, its characteristics, properties and use in various instruments

Course Outcomes: B.Sc. I

Paper I: Mechanics -I

By the end of this Course students should be able to know about:

1. Different types of motions in nature.
2. Difference between translational motion and rotational motion.
3. Different laws of motions.
4. Differential equations and their applications.

Paper II: Mechanics -II

By the end of this Course students should be able to know about:

1. Oscillations and waves and their properties.
2. Use of waves in general life.
3. Various elastic constants and properties of elasticity.
4. Surface tension and their applications.
5. Applications of GPS and Satellite.

Paper III: Electricity and Magnetism -I

By the end of this Course students should be able to know about:

1. Scalar vector and their mathematical Applications.
2. Dielectric phenomenon.
3. Difference between polar and non-polar molecules.
4. Various types of Condenser and calculation of capacity.

Paper IV: Electricity and Magnetism -II

By the end of this Course students should be able to know about:

1. What is the origin of magnetic property of material?
2. Complex number and their application in solving problems in Ac circuits.
3. Biot Savarts law and its applications.
4. Maxwell's equations and electromagnetic waves propagation in vacuum and isotropic dielectric medium

Paper V: Thermal Physics and Statistical Mechanics -I

By the end of this Course students should be able to know about:

1. General information of various types of gases and theories related to it.
2. Thermal properties of gases and various laws related in thermodynamics.
3. Transport phenomena in gases.
4. Concept of heat and temperature and different types of thermometer.

Paper VI: Waves and Optics -I

By the end of this Course students should be able to know about:

1. Use of Cathode ray oscilloscope in oscillations.
2. Linearity and superposition principles
3. Coupled oscillatory system.
4. Oscillations and waves and their properties.
5. Viscosity of liquid and its mathematical theory related with it.

Paper VII: Thermal Physics and Statistical Mechanics -II

By the end of this Course students should be able to know about:

1. Study of thermodynamic and different thermodynamically relations
2. Study of theory of radiations.
3. Study of classical and quantum statistics
4. Thermodynamic probability and probability distribution.
5. LASERS and applications in various fields.

Paper VIII: Waves and Optics -II

By the end of this Course students should be able to know about:

1. Lenses and various cardinal points.
2. Formation of Images by Newton's formula.
3. Properties of light like interference, diffraction and polarization with theory and experiments.
4. Resolving power of different optical instruments

Paper IX: Mathematical and Statistical Physics

By the end of this Course students should be able to know about:

1. Study of different coordinate systems.
2. Differential equations and their applications.
3. Experimental study of Black body radiation spectrum.
4. Basic concepts in statistical physics and MB, BE, FD statistic.

Paper X: Quantum Mechanics

By the end of this Course students should be able to know about:

1. Interpretation of wave function and Schrodinger's wave equation
2. Quantum mechanical treatment of particle in a rigid box.
3. Schrodinger's equation for hydrogen atom
4. Significance of quantum numbers.
5. Various operators in quantum mechanics.

Paper XI: Classical Mechanics

By the end of this Course students should be able to know about:

1. Study of mechanics of particle and system of particle.
2. Coriolis force and effect of Coriolis force in nature
3. Applications of Lagrange's equations
4. Study of techniques of calculus of variation
5. Motion of rigid body in space

Paper XII: Atomic and Molecular Spectra, Astronomy and Astrophysics

By the end of this Course students should be able to know about:

1. Doublet fine structure and electron spin orbit interaction
2. Effect of magnetic field on atomic spectra
3. Study the Raman effect and its classical theory.
4. Study of origin of solar system.
5. Evidences of geological activities.

Paper XIII: Nuclear and Particle Physics

By the end of this Course students should be able to know about:

1. Need of accelerators and principal, construction and working conditions of accelerators.
2. Study of principal, construction and working conditions of nuclear detector.
3. Study of nucleus and its properties.
4. Origin of cosmic rays and its types.

Paper XIV: Energy Studies and Material Science

By the end of this Course students should be able to know about:

1. Classification of energy resources and their alternatives.
2. Solar energy from satellite power station.
3. Study of impurities in solid and defect in solids.
4. Study of super conductivity.
5. Introduction of Nano science and Nano technology

Paper XV: Electrodynamics and Electromagnetic Waves

By the end of this Course students should be able to know about:

1. Study of electrostatics and motion of charge particle.
2. Electromagnetic inductions and their applications.
3. Maxwell's equations and their physical significance.
4. Study of skin depth conservation of energy in electromagnetic fields.

Paper XVI: Solid State Physics

By the end of this Course students should be able to know about:

1. Study of crystalline and non-crystalline solids.
2. Study of x ray diffraction method.
3. Elastic vibrations of diatomic and mono atomic lattice
4. Solid state devices and their applications.
5. Study of metal semiconductors and insulator.

B.Sc. (STATISTICS)

Program Specific Outcomes

1. The main objective of this program is to acquaint students with some basic concepts in Statistics.
2. Developing the knowledge of application of statistics in various fields of real life.
3. Developing the ability to apply various statistical tools to research problem.
4. Learning about how to collect, present, analyze and interpret the data.
5. Ability to build statistical knowledge and analyze the data by using Statistical software's.
6. Application of various distributions to real life situation.

Course Outcomes: B.Sc.

I Paper I: Descriptive

Statistics–I

By the end of this Course students should be able to know about:

1. Acquaintance with some basic concepts in statistics.
2. Making familiar with some elementary statistical methods of analysis of data viz. Measures of Central Tendency, Dispersion, Moments, Skewness, and Kurtosis and to interpret them.
3. To compute various measures of central tendencies, dispersion, moments, skewness, kurtosis and to interpret them.
4. Analysis of data pertaining to attributes and to interpret the results.

Paper II: Elementary Probability Theory

By the end of this Course students should be able to know about:

1. Acquainting with some basic concepts of probability.
2. To distinguish between random and non-random experiment.
3. To find the probabilities of various events.
4. To understand the concept of conditional probability and independence of events.
5. Ability to distinguish between univariate and bivariate probability distribution.

Paper III: Descriptive Statistics – II

By the end of this Course students should be able to know about:

1. To understand the concept of correlation and computation of correlation coefficient.
2. Interpreting the value of correlation coefficient and its use in regression analysis.
3. Understanding the concept of multivariate distributions.
4. Application of correlation and regression theory in various fields viz. Agriculture, Business, Medical Science, Industry etc.
5. To compute various index numbers.

Paper IV: Discrete Probability Distributions

By the end of this Course students should be able to know about:

1. To apply discrete probability distribution in different situations.
2. Distinguish between discrete variable and study their distributions.
3. Understanding some standard discrete probability distributions with real life situations.
4. Understanding concept of bivariate distribution and computation of related probabilities.

Course Outcomes: B.Sc. II

Paper-V: Continuous Probability Distributions-I

By the end of this Course students should be able to know about:

1. To apply continuous univariate and bivariate probability distribution in different situations.
2. Distinguish between univariate and bivariate variable and study their distributions.
3. Transformations of continuous univariate and bivariate random variables.
4. Study of Uniform and Exponential Distribution probability distributions with real life situations.

Paper VI: Bivariate Discrete Distributions and Multiple Regression Analysis

By the end of this Course students should be able to know about:

1. To apply Bivariate discrete probability distribution in different situations.

2. To apply bivariate discrete probability distribution in different situations.
3. Study and analysis of multiple linear regressions.
4. Study and analysis of Multiple and Partial Correlation.

Paper-VII: Continuous Probability Distributions-II

By the end of this Course students should be able to know about:

1. To apply continuous probability distribution in different situations.
2. Study of Gamma distributions with real life situations.
3. Study of Beta distribution of first kind and second kind distributions with real life situations.
4. Study of Normal probability distributions with real life situations.
5. Study of Exact Sampling Distributions (Chi-square, t & F) with real life situations.

Paper VIII: Statistical Methods

By the end of this Course students should be able to know about:

1. Study of the Index Numbers and its applications.
2. To understand the concept of Time Series and its applications.
3. To understand the concept of Tests of Hypothesis and its real life applications.
4. To understand the concept of Statistical Quality Control (SQC) and its applications.

B. Sc. (ZOOLOGY)

Program Specific Outcomes

1. Improving the knowledge about criteria for animal classification.
2. Study of salient features of chordates and non-chordates.
3. Improving the knowledge of animals about their special adaptations and evolutionary relationship.
4. Scientific study of their nature of habitant with environment.
5. Improving information about external morphology and anatomy of animals including human being.

Course Outcomes B.Sc.I.

Paper I: Animal Diversity I

By the end of this Course students should be able to know about:

1. Understanding the arrangement of organism or groups of organism in distinct categories in accordance with particular & well established plan.
2. Explanation of unity in diversity of organism.
3. Studying specific & scientific names to organism.
4. Collecting information about useful and harmful animals, helps in understanding the nature of habitat.

Paper II: Animal Physiology

By the end of this Course students should be able to know about:

1. Understanding the structure and function of cell & cell organelles.
2. To study animal tissue to improve knowledge about genetic information. it study how organism evolve from a single cell division, get knowledge about unicellular & multi-cellular organisms.
3. Understanding normal function of cell, organ or tissue.

Paper IV: Genetics

By the end of this Course students should be able to know about:

1. Study of structure function, molecular organization, growth, reproduction and genetics of cell.
2. Study of Mendelian and Post Mendelian genetics.
3. Study of Linkage and Crossing Over.
4. Study of Mutations.
5. Understanding evolutionary history of certain animals, study their sericulture which is one of the longest agro industries & silk is used in the manufacture of woven materials.

B.Sc. II

Paper V: Animal Diversity II

By the end of this Course students should be able to know about:

1. Understanding the arrangement of organism or groups of organism in distinct categories in accordance with particular & well established plan.
2. Understanding General Features and Classification up to orders; Venomous and non-venomous snakes, Biting mechanism in snakes.

3. Study General Features and Classification up to orders; Osmoregulation in Fishes.

Paper VI: Biological Chemistry

By the end of this Course students should be able to know about:

1. Study of chemistry within living organisms.
2. Perceiving the chemical components & chemical structure in organisms.
3. Study how body functioning with the help of chemical molecules & elements.

Paper VII: Reproductive Biology

By the end of this Course students should be able to know about:

1. Study outline and histology of female and male reproductive system
2. Functional anatomy of female and male reproduction.
3. Understand infertility in male and female: causes, diagnosis and management; Assisted
4. Reproductive Technology: sex selection, sperm banks, frozen embryos, invitro fertilization, ET, EFT.

Paper VIII: APPLIED ZOOLOGY

By the end of this Course students should be able to know about:

1. Improving proper knowledge about Transmission, Prevention and control of diseases Tuberculosis, typhoid.
2. Understanding Insects of Economic Importance.
3. Study the principles of poultry breeding, Management of breeding stock and broilers, Processing and preservation of eggs.

B. Sc. (MATHEMATICS)

Program Specific Outcomes

1. Apply critical thinking and communication skills to solve applied problems.
2. Use knowledge skills necessary for immediate employment or acceptance into a graduate program.
3. Maintain a core of mathematical and technical knowledge that is adoptable to changing technologies and provides a solid foundation for future learning.
4. Apply mathematical concepts and principles to perform computation.
5. Create use and analyze graphical representation of mathematicalm

relationships.

Course Outcomes B.Sc.I.

Paper I: Differential Calculus.

By the end of this Course students should be able to know about:

1. The student learns to find the n^{th} derivative of product of two functions.
2. The student learns the notion of partial differentiation and the importance of Euler's theorem on homogeneous function.
3. The student learns the method of finding extreme values of a function by Lagrange's method of undetermined multipliers.
4. The student learns the notion of hyperbolic functions and their properties function.

Paper II: Calculus

By the end of this Course students should be able to know about:

1. The student learns the Mean Value Theorems.
2. The student learns L'Hospital's rule and the indeterminate forms.
3. The student learns the series expansions by using Taylor's and Maclaurin's theorems.
4. The student learns the notion of continuity.

Paper III: Differential Equations-I

By the end of this Course students should be able to know about:

1. The student learns exact differential equations , condition for exactness, integrating factors (I.F.), linear differential equations and Bernoulli's equation.
2. The student learns differential equation of first order but not of first degree, Clairaut's equation,
3. The student learns to find general solution of

$f(D)y=0$
and $f(D)y=X$

4. The student learns homogeneous linear equation.

Paper IV: Differential Equations-II

By the end of this Course students should be able to know about:

1. The student learns second order linear differential equations.
2. The student learns simultaneous linear differential equations.
3. The student learns partial differential equations.
4. The student learns first order partial differential equations.

B.Sc. II

Paper V: Differential Calculus

By the end of this Course students should be able to know about:

1. Define epsilon delta definition of Limit and continuity of function of one variable.
2. State and prove basic properties of Limit and continuity of function.
3. Prove some important theorems on continuity.
4. Explain differentiability using concept of limit.
5. Define Jacobian and solve examples on it.
6. Find maxima and minima of function of two variables.
7. Solve examples based on Lagrange's undetermined multipliers of three variables.
8. Find error and approximations.
9. Define basic concepts Gradient, Divergence and Curl and solve examples on it.

Paper VI: Differential Equations

By the end of this Course students should be able to know about:

1. Find solution of homogeneous linear equations of higher order.
2. Compute all solutions of second order linear diff. equations using various methods.
3. Compute solutions of ordinary simultaneous diff. equations.
4. Give Geometrical interpretation of ordinary simultaneous diff.

equations.

5. Solve Total Diff. equation.

6. Explain Geometrical interpretation of Total diff. equation.

Paper VII: Integral Calculus

By the end of this Course students should be able to know about:

1. Define Gamma and Beta function.
2. State properties of Gamma and Beta function.
3. Evaluate integral using Gamma and Beta function.
4. State and use Duplication formula.
5. Derive relation between Gamma and Beta function.
6. Evaluate double integral and triple integral over the given region.
7. Apply change of order method to find double integral.
8. Find Fourier series expansion for given function.
9. Find Cosine and Sine series expansion for given function.
10. Find integral with its limit as constant.
11. Find integral using Leibnit's Rule .
12. Find error function.

B. A. (English)

Program Specific Outcomes

A student, who has taken admission into program of B.A with English as Specific subject of study is expected to achieve following outcomes.

1. Basic knowledge of English as Language is essential to understand English literature.
2. Students get basic Knowledge language and grammar when they acquire their degree.
3. Knowledge of English language helps them to think critically while studying English literature. They are able to relate pleasure of literature and real life.
4. Department of English conducted Certificate course in Communication Skill.

I. Program Outcome of Bachelor of Arts (B.A.)

Student seeking admission for B.A. programme is expected to imbue with following quality which help them in their future life to achieve the expected goals.

- a. Realization of human values.
- b. Sense of social service.
- c. Responsible and dutiful citizen.
- d. Critical temper
- e. Creative ability.

II Programmes Specific Outcomes (PSO's)

Course Outcomes

B.A.I (English for Communication)

By the end of this Course students should be able to know about:

1. The students admitted for English course acquire spoken and written communication skills.
2. These skills help them to prepare their resume, letter of and business letters.
3. Writing skills help those students to work as a free lance writer for news paper.
4. With the help of spoken skills, they are also able to express their experience and daily routine.
5. The students are taught interview techniques so as to face interview in the future.

B. A. I (English Optional)

By the end of this Course students should be able to know about:

1. To introduce short story and its forms
2. To introduce Types of Short Stories
3. To introduce Historical development of short story and novel
4. To develop literary Competence in the students

B.A.II (Paper III & V) Modern English Literature

By the end of this Course students should be able to know about:

1. Introduction to modern poetry
2. To introduce the playwright and his contribution to the field of drama
3. To appreciate poetry in English as well as drama as literature
4. To introduce modern British and American poets
5. To understand features of the play

B. A. II Paper IV & VI (Indian English Literature)

By the end of this Course students should be able to know about:

1. To introduce Indian English literature
2. To create awareness about the Appreciation of the Novel
3. To Create awareness about appreciation of Indian English poems
4. To enjoy Indian English Literature

B. A. III (English for Communication)

By the end of this Course students should be able to know about:

1. To equip students with Spoken and Written Modern English
2. To understand English for Journalism
3. To understand the technique of Group Discussion
4. To understand Technique of Interview
5. To Create Awareness for avoiding Errors in written English

**B.A.III (Special English) Paper VII & Paper XII (CO)
(Literary Criticism and Critical Appreciation)**

By the end of this Course students should be able to know about:

1. To introduce the major trends in literary criticism
2. To familiarize critical concepts
3. To make students aware of original contributions to literary Criticism
4. To train students to write critical appreciation

**B.A.III (Special English) Paper VIII & Paper XIII (CO)
(Understanding Poetry)**

By the end of this Course students should be able to know about:

1. Enjoyment of literature through prescribed syllabus
2. To understand function of literature by studying literary form, poetry
3. Critical analysis of various types of lyrics
4. To study poetry in various historical periods.
5. To develop the human mind emotionally.

B. A. III Paper X & XV (Understanding Novel)

By the end of this Course students should be able to know about:

1. To create awareness about form of Novel
2. To create awareness about Types of novel
3. To create awareness about Literary Terms
4. To create awareness and enhance interest about learning Indian as well as British novels

**B. A. III Paper XI & XVI
(The Structure and Function of Modern English)**

By the end of this Course students should be able to know about:

1. To Introduce Phonetic Symbols
2. To create awareness about English grammar deeply
3. To create awareness about discourse Analysis
4. To create awareness about English grammar deep

B. A. Part III Paper-IX & XIV (Understanding Drama)

By the end of this Course students should be able to know about:

1. The syllabus helps the student to understand Indian as well as Western Literature.
2. Student enjoyed drama as a literary form and drama as a performing art.
3. The Literature developed overall and comprehensive thinking ability among the students.
4. The syllabus helped student to understand various shades of human nature.
5. The syllabus helped the students to develop decision making ability and also helped to understand relation between literary exposure of human life and reality.

English B. Sc. Part I Paper-English for Communication

By the end of this Course students should be able to know about:

1. Students are acquainted and equipped with communication skills.
2. Human values are inculcated among the students through poems and prose.
3. Language competence is improved among the students.
4. Students are aware Indian culture and literature with the help of prose.
5. The syllabus helped the students in preparing data and its presentation as well as telephonic communication, narration and description of the event or incident.

B. Sc. Part III (English for Communication)

By the end of this Course students should be able to know about:

1. Students are prepared in avoiding common errors in written English.
2. Students are also prepared in interacting in a group discussion, writing official reports and letters and organizing paragraphs.
3. The syllabus makes student aware about eminent personalities and their contribution in the development of India.
4. The syllabus also makes the students aware about diverse Indian culture and literature.

- Students are prepared in communication skills including vocabulary and writing and speaking skills.

B. A. (Marathi)

Program Specific Outcomes

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Course Outcomes

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- tkfgjkr o ckrehpkvuqokndj.ks

4- Ckh- ,-Hkkx 2 isij 4 o 6

- o`Rri=krhyckrE;kapslaiknudj.ks
- fu;rdkyhdsxkSjoxzaFk ;kaphjpukdj.ks-
- larkP;klkekthddk;kZpkijhp; d:u ns.ks-

5- Ckh- ,-Hkkx 3 isij 7 o 12

- vyadkjo`Rrs o Nankpkokij d:u Hkk"kspslkSan;Z ok<fo.ks-
- dFkkdohrkys[kuke/;s Hkk"kspkvpwdokijdj.ks-
- lkfgR;kP;kHkk"khdokijkpsLo:lkLi"Vdj.ks

6-Ckh- ,-Hkkx 3 isij 8 o 13

- 1- Hkk"ksP;klkaLd`frd o lkekthdmRiRrhpkvUo;kFkZyko.ks
- 2- fofo/k cksyhHkk"kspkokijys[kuke;/s o O;ogkjkrdj.ks-
- 3- izek.kHkk"kse;/s ys[kudj.ks-

7-Ckh- ,-Hkkx 3 isij 9 o 14

- 1- larkP;klkekthddk;kZpkijhp; d:u ns.ks-
- 2- laLd`r] vjchQkjlhHkk"kkapkejkBhojhyizHkkoLi"Vdj.ks
- 3- yskddFkkyksdxhrkrwuyksdlaLd`rh o ijaijpkokjlk 'kks/k.ks-

8-Ckh- ,-Hkkx 3 isij 10 o 15

- 1- vkdk'kok.kh] o`Rri= o nwjn`kZu ;kaP;klkBhckrehladyu]laiknudj.ks
- 2- dFkk] dforkys[kudj.ks
- 3- ukVd] fp=iV ;kaP;klafgrspsys[kudj.ks

9-Ckh- ,-Hkkx 3 isij 10 o 16

- 1- 'ksrdjhthoukP;klkekthdleL;kapsLo:lakaph ekaM.kh dj.ks-
- 2- vkfnoklhaps thou] laLd`rhijaijk ;kaph ekaM.kh dj.ks-
- 3- nyhrkaP;k thou] laLd`rhijaijk ;kaph ekaM.kh dj.ks-

ejkBhfoHkkx

Department of History

Program Specific Outcomes

On completion of the BA with History special, students will be able to

1. Understand the basic themes, concepts, chronology and the Scope of Indian History.
2. Acquaint with range of issues related to Indian History that span distinct eras.
3. Understand the history of countries other than India with comparative approach.
4. Think and argue historically and critically in writing and discussion.
5. Prepare for various types of Competitive Examinations
6. Critically recognise the Social, Political, Economic and Cultural aspects of History.

B.A.I HISTORY (from June 2018)

Paper I: Rise of the Maratha Power (1600-1707)

By the end of this Course students should be able to know about:

1. Students understand history from 1600 to 1707 was an important epoch in the history of Marathas. Chhatrapati Shivaji Maharaj established the Maratha state.
2. Introduce students to the history of the rise of Maratha power with main emphasis on life and work of Chhatrapati Shivaji Maharaj.
3. The course is also expected to apprise the students with the sacrifices made by Maratha leaders and people to protect freedom and sovereignty of the region)
4. Students able to give historical speech on Maratha power

Paper II: Polity, Society and Economy under the Marathas (1600-1707)

By the end of this Course students should be able to know about:

1. Students understand history from 1600 to 1707 was a period of rapid change in the history of Marathas.
2. Students understand the social, political and religious policy of Chhatrapati Shivaji Maharaj.
3. The course is designed to acquaint the students with the political, socio- economic and religious life of the people during the 1600-1707 period.
4. It will educate the students about the policy and contribution of Chhatrapati Shivaji Maharaj.

Paper III- History of Modern Maharashtra (1900 To 1960)

By the end of this Course students should be able to know about:

1. Understand the beginnings and growth of nationalist consciousness in Maharashtra
2. Explain the contribution of Maharashtra to the national movement
3. Give an account of various movements of the peasants, workers, women and backward classes
4. Know the background and events which led to the formation of separate state of Maharashtra.

Paper IV: History of India (1757-1857)

By the end of this Course students should be able to know about:

1. Acquaint himself with significant events leading to establishment of the rule of East India Company
2. Know the colonial policy adopted by the company to consolidate its rule in India
3. Understand the structural changes initiated by colonial rule in Indian economy.
4. Explain the various revolts against rule of the East India Company

Paper V: History Of Modern Maharashtra (1960 To 2000)

By the end of this Course students should be able to know about:

1. Acquaint himself with the contribution of eminent leaders of Maharashtra
2. Know about the economic transformation of Maharashtra
3. Understand the salient features of changes in society
4. Explain the growth of education

Paper VI: History of Freedom Struggle (1858-1947)

By the end of this Course students should be able to know about:

1. Understand the events which lead to the growth of nationalism in India
2. Acquaint himself with major events of the freedom struggle under the leadership of Mahatma Gandhi
3. Explain the contribution of Revolutionaries, Left Movement and Indian National Army
4. Know the concept of Communalism and the causes and effects of the partition of India

IDS Paper I: Social Reforms in India

By the end of this Course students should be able to know about:

1. Understand the salient features of prominent socio-religious reform movements
2. Explain the thought and work of Mahatma Phule for radical transformation of Indian society
3. Know the measures taken by Rajashri Shah Maharaj for emancipation of lower classes and women
4. Understand the thoughts of Ambedkar on the annihilation of the caste system and untouchability in India
5. Know how the Indian constitution embodies the values of social justice and equality

IDS Paper- II: Social Reforms In Maharashtra

By the end of this Course students should be able to know about:

1. Know about the beginnings of social reforms in Maharashtra by the Paramhansa Mandali and Prarthana Samaj.
2. Understand the contribution of women reformers
3. Explain the contribution of Social reformers in the fight for social justice
4. Explain the role played by educational reforms in transformation of society.

History of Ancient india Paper VII Sem- V

By the end of this Course students should be able to know about:

- 1) To create Awareness about Archaeological history in the students.
- 2) To introduce Different pre historic cultures among the students.
- 3) to introduce Vedic literature in the students.
- 4) To create awareness among student about prehistoric civilization.

History of Mughal india paper – VIII sem -V

By the end of this Course students should be able to know about:

- 1) To raise Awareness about Historiography and its approaches in the students.
- 2) To study polity in the period of Akbar Chand Bibi Ibrahim Adilshah , Allauddin Khilaji, Krishnadevrai Aurangzeb and their relations in religion .
- 3) To create awareness about trade and commerce among students .

India Since Independence part- paper –IX

By the end of this Course students should be able to know about:

- 1) To study deeply about about political part congress .
- 2) To study other political parties in short IP ,ID,BJP.
- 3) To promote students knowledge about Agriculture in the period of 1947-1991.
- 4) To Impart knowledge about Industry and Trade , Import , Export , Heavy Industris.

History of the Marathas (1707-1818) paper –X

By the end of this Course students should be able to know about:

- 1)To study political condition Chh. Shahu and third war of panipat.
- 2) To create Awariness ab out the political conditionsin the period Mahadevrao savai Madhavrao and Bajirao II.
- 3)To study socio –Economics conditions in the period of Pashwas.
- 4) To raise Curiosity of students about culture Visual Arts and Architect.

Introdution to Historiography - paper –XI

By the end of this Course students should be able to know about:

- 1) To study meanings , Nature and kinds of History.
- 2) To study classification and Important of Historical sources.
- 3) To guide process of writing History.
- 4) To create Awariness about Tools of History among students.

History of Ancient India sem- vi paper – XII

By the end of this Course students should be able to know about:

- 1) To study Jainism Buddhism and Expasion of settlements and Urbanization .
- 2) To study of mauryan Empire and Ashokas.
- 3) To Introduce the age of Guptas and culture progress.
- 4) To study Harshavardhnas Administration and religious policy.

History of Mughal India paper – XIII sem – VI

By the end of this Course students should be able to know about:

- 1) To Impart Knowledge about Urban centers.
- 2) To study cultural Development, language, literature and Art .
- 3) To create Awareness about Patterns and policy in Maharashtra and Rajasthan.
- 4) To study deeply Religion and culture of Sufis and saint tradition.

India Since Independence part –II paper –XIV

By the end of this Course students should be able to know about:

- 1) To study Foreign policy .
- 2) To study the problems like students unvest Terrorism, Naxalism , Maoism.
- 3) To create Awareness about the Environment Womans and Depressed class movement .
- 4) To Understand concept merit Demerits of LPG since' 1992.

Modern Maharashtra - 1960 – 2000 Paper - XV

By the end of this Course students should be able to know about:

- 1) To study Formation of Maharashtra state.
- 2) To create Awareness about Economy India.
- 3) To study social movements in India .
- 4) To give Knowledge about the cultural Life in India.

Applications of History Paper - XVI

By the end of this Course students should be able to know about:

- 1) To study of museums deeply Ref . chh Shivaji Maharaj.
- 2) To study Historical tourism in Maharashtra : Ajintha, Verul

,Daulatabad , Raigad, Ellora.

- 3) To give Knowledge about preservation and conversation of Documents paintings and movements.
- 4) To create Awareness among the students about careers in History.

B. A. (Economics)

Programme Specific Outcomes

1. Understanding how different degrees of competition in a market affect pricing and output.
2. Understanding the efficiency and equity implications of market interference, including government policy.
3. Developing research knowledge in economics.
4. Developing the skill of data collection & use of sampling techniques in research.
5. Developing the knowledge about theories of economic growth & Development and issues of economic planning.
6. Creating awareness about changing macro-economic policies and theories.

B.A. PART I

Paper-I: INDIAN ECONOMY - I

By the end of this Course students should be able to know about:

1. Intends to acquaint the students with various dimensions of, as also the challenges, confronting the Indian economy.
2. It endeavors to provide useful insights to the students about the present economic standing and composition of the Indian economy, the major sectors and their relative importance in the Indian economy and the major challenges faced by it.
3. Introduce the students to the Indian economy.
4. Develop an understanding of challenges facing the Indian economy.

5. Acquaint the students with Structure of the Indian economy and Changes Taking Place therein.

Paper-II:INDIAN ECONOMY - I

By the end of this Course students should be able to know about:

1. Acquaint the students with various dimensions of, as also the challenges, confronting the Indian economy.
2. It endeavors to provide useful insights to the students about the present economic standing and composition of the Indian economy, the major sectors and their relative importance in the Indian economy and the major challenges faced by it.
3. Acquaint the students with the policies and performance of major sectors in Indian Economy.
4. Explain the economic reforms introduced in India since 1991.

B.A. PART II

Paper-III:PRINCIPLES OF CO-OPERATION COURSE – I GE

By the end of this Course students should be able to know about:

1. Generating awareness about the working of co-operatives in Rural and Urban area.
2. Understanding the concept, nature and structure of cooperation
3. Understanding the organization of Capitalism and Socialism.
4. Increase knowledge regarding cooperative audit.

Paper No– IV:MONEY AND BANKING

By the end of this Course students should be able to know about:

1. Generate the awareness among the students and Job Prospects in Banks and Financial Sector.

2. Clear understanding of the operation of banks and financial institutions to the students with practical inputs.
3. Understanding the function, structure and process of Reserve Bank of India.
4. Improve knowledge of Banking and Finance.

Paper-V:BANKS AND FINANCIAL MARKETS

By the end of this Course students should be able to know about:

1. Generating awareness about the working of co-operatives in Rural and Urban area.
2. Understanding the cooperative credit structure in India.
3. Understanding the function and importance of financial system in India.
4. Improve knowledge of Banking and Finance.

Paper-III:MACRO ECONOMICS -I

By the end of this Course students should be able to know about:

1. Introduce the basic primary and analytically important concepts, theories and policies in the working of the economy to the learners.
2. Able students to apply various concepts in the process of policy making, planning of measures to ensure and achieve the fundamental objectives of macroeconomic policy.
3. Understanding the various concept of National Income.
4. Understanding the various theories regarding output and employment.

Paper-IV:MACRO ECONOMICS –II

By the end of this Course students should be able to know about:

1. Introduce the basic primary and analytically important concepts, theories and policies in the working of the economy to the learners.
2. Understand the basic theoretical framework underling in the field of macro economics.
3. Understanding the various concept of Inflation and Trade Cycles.
4. Understanding the aspects of public finance and public expenditure.

B. A. – III ECONOMICS

Paper No- VII:MICRO ECONOMICS

By the end of this Course students should be able to know about:

1. Understand the economic behaviour of individual firms and markets.
2. Understand the decision making of consumer.
3. Understand the nature of revenue and cost of production.
4. Students get knowledge with the various aspects of a consumer behaviour and demand analysis, production theory and behaviour of revenue and cost.

Paper- VIII:RESEARCH METHODOLOGY IN ECONOMICS (Part -I)

By the end of this Course students should be able to know about:

1. Students of Economics should know the basic concept and methodology of research.
2. Get acquaint with the research in Economics
3. Understand the various aspects of Research in Economics
4. Improve the logical thinking power.

Paper No- IX:HISTORY OF ECONOMIC THOUGHTS.(PART -I)

By the end of this Course students should be able to know about:

1. The student should know the contribution of Economic thoughts.
2. Able to know the concepts by classical, neo-classical and modern economists.
3. Understand the development of economic thoughts.
4. Understand the economic thoughts of Classical, Nationalist and Socialist Thinkers.

Paper No-X:ECONOMICS OF DEVELOPMENT

By the end of this Course students should be able to know about:

1. The students to know about the concept of economic development.
2. The students also know about the theories of Growth and Development, sectoral aspects of development, domestic macro policies etc.

3. Students know the concept and aspects of economic Development.
4. Understand the theories of economic growth & Development.

Paper No – XI:INTERNATIONAL ECONOMICS (Part-I)

By the end of this Course students should be able to know about:

1. Understanding of the basic principles that tend to govern the free flow of trade in goods and services at the global level.
2. The students are to know the impact of free trade and protective trade on the different sectors of the economy as well as at the macro level.
3. The students would also be well trained about the rationale of recent changes in the export-import policies of India.
4. Student has become relatively more relevant from the policy point of view under the present global scenario.

Paper- XII:MARKET AND PRICING

By the end of this Course students should be able to know about:

1. Analysis the economic behaviour of individual firms and markets.
2. Understand the equilibrium of firm in various markets. It also deals with factor pricing.
3. Understand the market structure.
4. Understand pricing in different markets.
5. Understand the factor pricing.

Compulsory Paper- XIII: RESEARCH METHODOLOGY IN ECONOMICS (PART-II)

By the end of this Course students should be able to know about:

1. Students of Economics should know the basic concepts and methodology of research and report writing.
2. Understand the sampling techniques as a method of data collection.
3. Understand the various aspects of data processing and analysis.
4. Increase statistical as well as graphical skill and techniques.

Paper No-XIV:HISTORY OF ECONOMIC THOUGHTS (PART-II)

By the end of this Course students should be able to know about:

1. This paper analyzes the Neo–classical and Indian economic thoughts.
2. The students should able to know the contributions of Indian economic thinkers and Neo-classical
3. Understand the economic concepts and theories of Neo-classical and Indian thinkers.
4. Understand the development of Indian economic thoughts.

Paper No. XV:ECONOMICS OF PLANNING

By the end of this Course students should be able to know about:

1. The students to know about the concept of economic planning.
2. The students also know about issues in development planning and economic planning in India.
3. Understand the concept and issues of economic planning.
4. Students know the about Indian economic planning.

Paper No. –XVI:INTERNATIONAL ECONOMICS (Part-II)

By the end of this Course students should be able to know about:

1. Understanding knowledge about the basic principles that tend to govern the free flow of trade in goods and services at the global level.
2. The students to know the impact of free trade and protective trade on the different sectors of the economy as well as at the macro level.
3. The students would also be well trained about the rationale of recent changes in the export-import policies of India.
4. Increase knowledge regarding International Institutions.

Aundh Shikshan Mandal, Aundh
RAJA SHRIPATRAO BHAGAWANTRAO MAHAVIDYALAY, AUNDH
DEPARTMENT OF CHEMISTRY
Academic Year 2021-22

PART – A

Name of Department: Department of Chemistry

Vision: To Develop a globally competent attitude among students for Nation Building.

Mission:

1. To impart the scientific knowledge and training to the students.
2. To prepare Skillful students for the advancement of science and technology.
3. To cater the needs of industrial and pharmaceutical companies.
4. To prepare the students for competitive examination in chemistry.

Name of Program: B.Sc. Chemistry

The B.Sc. Chemistry program offered by Shivaji University is a Three Years full time program. In order to make students aware about their career in one of the versatile branch of science and their scientific temperaments, students will get exposure to the depth of core understanding of various aspects of chemistry during these three-year study.

PROGRAM OUTCOME (B.Sc. Chemistry)

PO1. Students will be able to understand the fundamental chemistry concepts.

PO2. Students will be able to solve various problems by identifying the essential parts of a problem with formulating the strategy.

PO3. Students will be able to acquire specific knowledge and technical skills needed for employment in industries, teaching fields and choice of subject for higher education.

PO4. Students will be able to apply the fundamental knowledge to address the crosscutting issues such as Environmental issue for sustainable development.

PO5. Students will be able to communicate effectively with the knowledge of critical thinking and problem solving approach i. e. being able to comprehend and write effective reports, make effective presentations and documentation.

PO6. Student will able to understand the principles, electrochemical properties, physico-chemical and structural analysis with kinetic and thermodynamic properties of material.

Program Specific Outcomes (B. Sc. Chemistry)

PSO 1. Students will be able to qualify competitive examinations like NET, SET, GATE, BARC, TIFR etc.

PSO 2. Students will have opportunities to serve in different Chemical, Pharmaceutical, petrochemicals, metallurgical as well as food and agrochemical industries.

PSO 3. Students will have opportunities in M.Sc. Chemistry programme at university level.

PSO 4. Collaborate effectively on team-oriented projects in the field of Chemistry or other related fields.

PSO 5. Students can start their own chemical industry / business (entrepreneurship).

PSO 6. Students will be able to interpret NMR, MS, IR for structural elucidation.

PSO 7. Gain complete knowledge about all fundamental knowledge of all the elements of periodic table.

PSO 8. Understand the background of inorganic reaction mechanism, separation techniques and analytical methods.

PSO 9. Understand the knowledge of thermodynamic properties of material, different order of reaction in chemical kinetics, electrochemistry, solution properties, CST, physical properties of liquids and nuclear chemistry.

Part B

Syllabus Structure: Annexure – I

Semester-wise courses, their COs and Mapping Matrices

- 1. B.Sc. I Semester I DSC-3A- Chemistry paper I (Inorganic Chemistry)**
- 2. B.Sc. I Semester I DSC-4A- Chemistry paper II (Organic Chemistry)**
- 3. B.Sc. I Semester II DSC 3B: Chemistry Paper-III (Physical Chemistry)**
- 4. B.Sc. I Semester II DSC-4B-Chemistry Paper IV (Analytical Chemistry)**

Course Outcomes

B.Sc. Part-I, Sem-I DSC-3A- Chemistry paper I (Inorganic Chemistry)

CO 1. After successful completion of the course, Student will able to understand Principles, complete atomic structure and periodic table of elements.

CO 2. After successful completion of the course, Student will able to understand ionic bonding and molecular structure of different inorganic compounds.

CO 3. After successful completion of the course, Student will able to understand the concept of hybridization, valence bond theory and geometry of different inorganic compounds.

CO 4. After successful completion of the course, Student will able to understand the concept of Bonding and antibonding molecular orbitals, molecular orbital theory and bond order determination of inorganic compounds.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	3	2	3	3	3	3	3	2	1	3	3	1
CO2	3	3	3	3	3	2	3	3	3	3	3	3	1	3	1
CO3	3	3	3	3	3	3	3	3	3	3	3	2	3	3	1
CO4	3	3	3	3	3	2	3	3	3	3	3	3	3	3	2
TOTAL	12	12	12	12	11	10	12	12	12	12	11	9	10	12	5
AVERAGE	3	3	3	3	2.75	2.50	3	3	3	3	2.75	2.25	2.50	3	1.25

DSC-4A- Chemistry paper II (Organic Chemistry)

CO 1. After successful completion of the course, Student will be able to understand the fundamental knowledge of Bond fission, electronic displacement of molecular species, reactive intermediates and their stability.

CO 2. After successful completion of the course, Student will be able to understand the types of stereoisomers, element of symmetry and nomenclature of stereoisomers.

CO 3. After successful completion of the course, Student will be able to understand characteristic properties of organic compounds, aromaticity concept and mechanism of electrophilic substitution reaction.

CO 4. After successful completion of the course, Student will be able to understand the properties and preparation methods of cycloalkanes, cycloalkenes and alkadienes.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	3	2	3	3	3	3	3	2	1	3	3	1
CO2	3	3	3	3	3	2	3	3	3	3	3	2	1	2	1
CO3	3	3	3	3	3	2	3	3	3	3	3	2	2	2	1
CO4	3	3	3	3	3	2	3	3	3	3	3	3	2	2	2
TOTAL	12	12	12	12	11	9	12	12	12	12	11	8	8	9	5
AVERAGE	3	3	3	3	2.75	2.25	3	3	3	3	2.75	2	2	2.25	1.25

SEM-II-DSC 3B: Chemistry Paper-III (Physical Chemistry)

CO 1. After successful completion of the course, Student will be able to understand the basic concept of thermodynamics, laws of thermodynamics, Carnot cycle and its efficiency, thermochemistry and Kirchhoff's equation.

CO 2. After successful completion of the course, Student will be able to understand chemical equilibrium and its thermodynamic derivation. Distinction between ΔG and ΔG° , Le Chatelier's principle. Relationships between K_p , K_c and K_x for reactions involving ideal gases.

CO 3. After successful completion of the course, Student will able to understand Kinetic Theory of Gases and derivations. Van der Waals equation of state for real gases, Critical Phenomena, Most probable, average and root mean square velocities.

CO 4. After successful completion of the course, Student will able to understand detail study of Rate of reaction, factors affecting, order and molecularity of reaction. Characteristics of first and second order reaction, determination of order of reaction, Arrhenius equation and Theories of Reaction Rates.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	3	3	3	3	3	3	3	2	1	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	2	1	2	3
CO3	3	3	3	3	3	2	3	3	3	3	3	2	1	1	3
CO4	3	3	3	3	3	1	3	3	3	3	3	3	2	1	3
TOTAL	12	12	12	12	12	9	12	12	12	12	11	8	7	7	12
AVERAGE	3	3	3	3	3	2.25	3	3	3	3	2.75	2	1.75	1.75	3

DSC-4B-Chemistry Paper IV (Analytical Chemistry)

CO 1. After successful completion of the course, Student will be able to understand the Analytical process, methods of analysis, sampling, Errors and types of errors, significant figure, mean, median and deviation.

CO 2. After successful completion of the course, Student will able to understand Basic Principle and Classification of Chromatography, determination of R_f value, Applications, advantages and disadvantages. Comparison of paper chromatography and TLC .

CO 3. After successful completion of the course, Student will able to understand Acid-base indicators, Theory of indicators w.r.t. Ostwald's ionization theory and quinoid theory Neutralization curves and choice of indicators, Complexometric titrations.

CO 4. After successful completion of the course, Student will able to understand Physical analysis of water, COD,BOD, Types of fertilizers, Analysis of Nitrogen by Kjeldahl's method Analysis of Phosphorus by phosphomolybdate method Analysis of Potassium by sodium tetraphenyl borate method.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	3	3	3	3	3	3	3	2	1	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	2	1	2	3
CO3	3	3	3	3	3	2	3	3	3	3	3	2	1	1	3
CO4	3	2	3	3	3	2	3	3	3	3	3	1	2	1	3
TOTAL	12	11	12	12	12	10	12	12	12	12	11	6	7	7	12
AVERAGE	3	2.75	3	3	3	2.50	3	3	3	3	2.75	1.5	1.75	1.75	3

B.Sc. I Semester I and II Practical Course (Physical+Inorganic+Organic)

CO 1. After successful completion of the course, Student will be able to understand preparation and standardization of solutions, acid base titrations, iodometric titrations using different indicators and determination of percentage purity.

CO 2. After successful completion of the course, Student will be able to understand separation and identification of paper chromatography from different mixtures, estimation of aniline, aspirin and acetamide.

CO 3. After successful completion of the course, Student will be able to understand complete organic qualitative analysis process.

CO 4. After successful completion of the course, Student will be able to understand purification of organic compound by crystallization and distillation. Heat capacity, heat of ionization, determination of equivalent weight, reaction rate, enthalpy of solution and solubility of benzoic acid.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	2	1	1	3	3	3	3	2	1	1	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	1	2	2
CO3	3	3	3	3	3	2	3	3	3	3	3	2	1	1	3
CO4	3	2	3	3	3	3	3	3	3	2	3	2	2	1	3
TOTAL	12	11	12	11	9	9	12	12	12	11	11	7	5	7	11
AVERAGE	3	2.75	3	2.75	2.25	2.25	3	3	3	2.75	2.75	1.75	1.25	1.75	2.75

Syllabus Structure: Annexure – II

Semester-wise courses, their COs and Mapping Matrices

1. B.Sc. Part II (CBCS) Sem III DSC- C3 - Chemistry paper No. V (Physical Chemistry)
2. B.Sc. Part II (CBCS) Sem III DSC-C4- Chemistry paper No. VI (Industrial Chemistry)
3. B.Sc. Part II (CBCS) Sem IV DSC-D3- Chemistry paper No. VII (Inorganic Chemistry)
4. B.Sc. Part II (CBCS) Sem IV DSC- D4 - Chemistry paper No. VIII (Organic Chemistry)

B.Sc.Part II (CBCS) Sem III

Paper No. DSC- C3 - Chemistry paper No. V (Physical Chemistry)

CO 1. After successful completion of the course, Student will be able to understand Learning and understanding conductivity and transport number of the aqueous solutions with different applications.

CO 2. After successful completion of the course, Student will able to understand Knowledge about surface tension, viscosity and refractive index. Learning and understanding surface phenomena at heterogeneous surfaces.

CO 3. After successful completion of the course, Student will able to understand Learning the various nuclear phenomena and measurement of nuclear radiations

CO 4. After successful completion of the course, Student will able to understand Learning and understanding the knowledge about third order reaction and theories of reaction rates.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	2	3	3	3	3	3	3	2	1	1	2	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	2	1	1	3
CO4	3	2	3	3	2	2	3	3	3	2	3	2	2	1	3
TOTAL	12	11	12	11	10	10	12	12	12	11	11	7	6	7	12
AVERAGE	3	2.75	3	2.75	2.50	2.50	3	3	3	2.75	2.75	1.75	1.25	1.75	3

Paper No. DSC-C4- Chemistry paper No. VI (Industrial Chemistry)

CO 1. After successful completion of the course, Student will be able to understand Learning and Understanding basic concepts and concentration terms. Distinguish between classical and industrial chemistry, unit operations and unit processes.

CO 2. After successful completion of the course, Student will able to understand Knowledge of some unit operations, Understanding the process of corrosion and Knowledge of prevention from corrosion.

CO 3. After successful completion of the course, Student will able to understand Knowledge of Indian paper industry.

CO 4. After successful completion of the course, Student will able to understand Knowledge about the chemical nature and cleansing action of soap.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	2	3	2	3	3	3	3	2	1	1	2	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	1	2	1	3
CO4	3	2	3	3	2	1	3	3	3	2	3	2	1	1	3
TOTAL	12	11	12	11	10	8	12	12	12	11	11	6	6	7	12

AVERAGE	3	2.75	3	2.75	2.50	2	3	3	3	2.75	2.75	1.25	1.25	1.75	3
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B.Sc. Part II (CBCS) Sem IV

Paper No. DSC-D3- Chemistry paper No. VII (Inorganic Chemistry)

CO 1. After successful completion of the course, Student will be able to understand Learning and Understanding basic concepts about coordination complexes.

CO 2. After successful completion of the course, Student will able to understand Knowledge about application of chelates in analytical chemistry.

CO 3. After successful completion of the course, Student will able to understand the properties of P – block elements. Student will be capable of understanding the properties of 3d series elements.

CO 4. After successful completion of the course, Student will able to understand the basic knowledge about the qualitative analysis of inorganic compounds.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	1	2	1	2	3	3	3	2	1	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	1	2	1	3
CO4	3	2	3	3	3	1	3	3	3	2	3	2	3	3	3
TOTAL	12	11	12	10	10	7	11	12	12	11	11	6	10	10	12
AVERAGE	3	2.75	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.50	2.50	2.50	3

DSC- D4 - Chemistry paper No. VIII (Organic Chemistry)

CO 1. After successful completion of the course, Student will be able to understand knowledge about the synthesis, reactivity and applications of carboxylic acids.

CO 2. After successful completion of the course, Student will able to understand Knowledge about classification, preparation and applications of amines and diazonium salts. Understanding the classification, configuration and structure of carbohydrates

CO 3. After successful completion of the course, Student will be capable of understanding the nomenclature and reactivity of aldehydes and ketones.

CO 4. After successful completion of the course, Student will able to understand the basic knowledge conformational analysis of organic compounds.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
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CO1	3	3	3	1	2	1	2	3	3	3	2	1	2	2	2
CO2	3	3	3	3	2	2	3	3	3	3	3	2	2	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	1	2	1	2
CO4	3	2	3	3	3	2	3	3	3	2	3	2	3	2	2
TOTAL	12	11	12	10	10	7	11	12	12	11	11	6	9	8	9
AVERAGE	3	2.75	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.50	2.25	2	2.25

B. Sc II Practical Course Total Marks- 100 (I-35+O-30+P-25+J-10)

CO 1. After successful completion of the course, Student will be able to understand Gravimetric Analysis, titrimetric analysis Inorganic preparation and semi-micro qualitative analysis.

CO 2. After successful completion of the course, Student will able to understand organic Qualitative Analysis, organic estimations, Organic preparations and TLC.

CO 3. After successful completion of the course, Student will able to understand chemical kinetics experiments with equal and unequal concentration, instrumental and non-instrumental experiments.

CO 4. After successful completion of the course, Student will able to understand the principal of Thin Layer Chromatography and its applications.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	1	2	1	2	3	3	3	2	1	2	2	2
CO2	3	3	3	3	2	1	3	3	3	3	3	2	1	1	3
CO3	3	3	3	3	3	3	3	3	3	3	3	1	2	1	2
CO4	3	2	3	3	3	2	3	3	3	2	3	2	3	2	2
TOTAL	12	11	12	10	10	7	11	12	12	11	11	6	8	6	9
AVERAGE	3	2.75	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.50	2	1.50	2.25

B.Sc.Part III (CBCS)

Syllabus Structure: Annexure – III

Semester-wise courses, their COs and Mapping Matrices

Semester V : Papers IX-DSE-E5, X-DSE-E6, XI- DSE-E7, XII- DSE-E8,

Semester VI: Papers XIII- DSE-F5, XIV-DSE-F6, XV-DSE-F7 and XVI- DSE-F8

Paper – IX DSE-E5 & XIII DSE-F5: Inorganic Chemistry

Paper – X DSE-E6 & XIV DSE-F6: Organic Chemistry

Paper – XI DSE-E7 & XV DSE-F7: Physical Chemistry

Paper – XII DSE-E8 & XVI DSE-F8: Analytical and Industrial Chemistry

Paper – IX DSE-E5 & XIII DSE-F5: Inorganic Chemistry

CO 1. After successful completion of the course, Student will be able to understand the study of role of acids and bases in Chemistry. The study of non –aqueous solvents is important to learn all chemical properties of solutes and from the research point of view.

CO 2. After successful completion of the course, Student will able to understand the geometry, stability and nature of bonding between metal ion and ligand in complexes. Synthesis and the applications of the semiconductors and Superconductors in electrical and electronic devices.

CO 3. After successful completion of the course, Student will be capable of the structure, method of preparation and the applications of organo metallic compound in various fields.

CO 4. After successful completion of the course, Student will able to understand the classification, types, mechanism and applications of catalyst in industrial fields.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	1	2	1	2	3	3	3	2	1	2	3	3
CO2	3	2	3	3	2	2	3	3	3	3	3	2	2	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	2	2	1	2
CO4	3	2	3	3	3	2	3	3	3	2	3	2	3	2	2
TOTAL	12	10	12	10	10	7	11	12	12	11	11	7	9	9	10
AVERAGE	3	2.50	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.75	2.25	2.25	2.50

Paper – X DSE-E6 & XIV DSE-F6: Organic Chemistry-

CO 1. After successful completion of the course, Student will be able to understand the energy associated with electromagnetic radiation and its use in analytical technique.

CO 2. After successful completion of the course, Student will able to understand Knowledge of chromophore, auxochrome and calculation of λ_{\max} . Knowledge of vibrational transitions, regions of IR spectrum, functional group recognition.

CO 3. After successful completion of the course, Student will be capable Understanding of magnetic-nonmagnetic nuclei, shielding-deshielding, chemical shift, splitting pattern. Knowledge of molecular ion, fragmentation pattern and different types of ions produced.

CO 4. After successful completion of the course, Student will able to predict the structure of organic compound with the help of provided spectral data.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	2	2	1	2	3	3	3	2	3	2	1	2
CO2	3	3	3	3	2	2	3	3	3	3	3	2	2	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	2	2	1	2
CO4	3	3	3	3	3	2	3	3	3	2	3	3	3	2	2
TOTAL	12	12	12	11	10	7	11	12	12	11	11	10	9	7	9
AVERAGE	3	3	3	2.75	2.50	1.75	2.75	3	3	2.75	2.75	2.50	2.25	1.75	2.25

Paper – XI DSE-E7 & XV DSE-F7: Physical Chemistry

CO 1. After successful completion of the course, Student will be able to Learning and understanding quantum Chemistry, Heisenberg's uncertainty principle, concept of energy operators (Hamiltonian), learning of Schrodinger wave equation. Physical interpretation of the ψ and ψ^2 . Particle in a one-dimensional box.

CO 2. After successful completion of the course, Student will able to understand the Knowledge about spectroscopy, Electromagnetic spectrum, Energy level diagram, Study of rotational spectra of diatomic molecules: Rigid rotor model, Microwave oven, vibrational spectra of diatomic molecules, simple Harmonic oscillator model, Raman spectra: Concept of polarizability, pure rotational and pure Vibrational Raman spectra of diatomic molecules, related knowledge will be gained by the students.

CO 3. After successful completion of the course, Student will be capable Learning and understanding photochemical laws, reactions and various photochemical phenomena. Learning the various types of solutions, relations vapour pressure, temperature relations.

CO 4. After successful completion of the course, Student will able to Learning and understanding the knowledge of emf measurements, types of electrodes, different types of cells, various applications of emf measurements.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	3	3	3	2	3	3	3	2	2	2	1	3
CO2	3	3	3	3	2	3	3	3	3	3	3	2	2	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	3
CO4	3	3	3	3	2	3	3	3	3	2	3	3	3	2	3
TOTAL	12	12	12	12	10	12	11	12	12	11	11	9	9	7	12
AVERAGE	3	3	3	3	2.50	3	2.75	3	3	2.75	2.75	2.25	2.25	1.75	3

Paper No. DSE-E8 Chemistry paper No. XII (Analytical Chemistry)

CO 1. After successful completion of the course, Student will be able to understand Learning and understanding the techniques of gravimetric analysis.

CO 2. After successful completion of the course, Student will able to understand Knowledge of instrumental analysis of alkali and alkaline earth elements. Understanding, working and applications of optical methods as an analytical tool.

CO 3. After successful completion of the course, Student will be capable of Understanding theory and applications of potentiometric titrations.

CO 4. After successful completion of the course, Student will be able to understand the basics of ion exchange and column adsorption chromatography, Quality control practices in analytical industries / laboratories.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	3	3	2	2	3	3	3	2	1	2	1	2
CO2	3	3	3	3	2	2	3	3	3	3	3	2	2	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	2	2	1	2
CO4	3	3	3	3	2	2	3	3	3	2	3	1	3	2	1
TOTAL	12	12	12	12	10	8	11	12	12	11	11	6	9	7	8
AVERAGE	3	3	3	3	2.50	2	2.75	3	3	2.75	2.75	1.5	2.25	1.75	2

B.Sc. Part III (CBCS) SEMESTER -VI

Paper No. DSE-F5, Chemistry Paper No. –XIII (Inorganic Chemistry)

CO 1. After successful completion of the course, Student will be able to understand the topic focused on the mechanism of the reactions involved in inorganic complexes of transition metals. The students can understand the thermodynamic and kinetic aspects of metal complexes.

CO 2. After successful completion of the course, Student will be able to understand the generation of nuclear power with the help of nuclear reactions is highlighted. Role of radioisotopes in medicinal, industrial and Archaeology fields.

CO 3. After successful completion of the course, Student will be able to understand the characteristics, properties and separation of lanthanides and Actinides are discussed. Synthesis and IUPAC Nomenclature of Trans uranic elements (TU).

CO 4. After successful completion of the course, Student will be able to understand The techniques involve in ore dressing and extraction of cast iron from its ore are discussed. Role of various metals and non-metals in our health.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	3	3	3	2	3	3	3	3	1	3	3	3
CO2	3	3	3	3	2	2	3	3	3	3	3	1	2	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	2	3	1	2
CO4	3	3	3	3	2	3	3	3	3	2	3	2	3	2	3
TOTAL	12	12	12	12	10	11	11	12	12	11	12	6	11	9	11
AVERAGE	3	3	3	3	2.50	2.75	2.75	3	3	2.75	3	1.5	2.75	2.25	2.75

Paper No. DSE-F6 Chemistry Paper No. XIV (Organic Chemistry)

CO 1. After successful completion of the course, Student will be able to understand the Knowledge of reagents used in organic transformations and various reactions used in organic synthesis. Knowing basic terms used in retrosynthetic analysis, retrosynthesis of some organic compounds.

CO 2. After successful completion of the course Student will learn addition reaction across $>C=C<$ bond w.r.t. hydro halogenation, hydration hydroxylation, ozonolysis and addition of halogen, halogen acid, hydrogen, water, etc. across $-C\equiv C-$ bond.

CO 3. After successful completion of the course, Student will able to gain Knowledge of terpenoids and alkaloids w.r.t. occurrence, isolation, characteristics and classification. Analytical and synthetic evidences of Citral and Nicotine.

CO 4. After successful completion of the course, Student will able to understand classification of drugs, Qualities of ideal drug. Synthesis and uses of some representative drugs and Drug action of sulpha drugs.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	3	3	3	2	3	3	3	3	1	1	2	1
CO2	3	3	3	3	2	2	3	3	3	3	3	1	2	2	2
CO3	3	3	3	3	3	3	3	3	3	3	3	2	2	1	2
CO4	3	3	3	3	3	2	3	3	3	2	3	2	3	2	2
TOTAL	12	12	12	12	11	10	11	12	12	11	12	6	8	7	7
AVERAGE	3	3	3	3	2.75	2.50	2.75	3	3	2.75	3	1.5	2	1.75	1.75

Paper No. DSE-F 7 Chemistry Paper No. XV (Physical Chemistry)

CO 1. After successful completion of the course, Student will be able to Learning and understanding of phase rule, learning of one component, two component and three component systems phase diagrams with suitable examples. Knowledge about basic concept of Thermodynamics, free energy, Gibbs-Helmholtz equation and its applications, problem related with it.

CO 2. After successful completion of the course, Student will able to Learning and understanding Space lattice, lattice sites, Lattice planes, Unit cell. Laws of crystallography, Weiss indices and Miller indices, Cubic lattices and types of cubic lattice, planes or faces of a simple cubic system, Diffraction of X-rays, Derivation of Bragg's equation. Determination of crystal structure by Bragg's method. Crystal structure of NaCl and KCl based on Bragg's equation.

CO 3. After successful completion of the course, Student will able to understand the Learning of kinetics, Simultaneous reactions such as i) opposing reaction ii) side reaction iii) consecutive reactions: iv) chain reaction v) explosive reaction.

CO 4. After successful completion of the course, Student will able to Learning and understanding the knowledge of distribution law, its modifications, applications of distribution laws, process of extraction, determination of solubility, distribution indicators, molecular weights.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	3	3	2	2	3	3	3	3	2	1	2	3
CO2	3	3	3	3	3	2	3	3	3	3	3	1	2	2	3
CO3	3	3	3	3	3	1	3	3	3	3	3	2	2	2	3
CO4	3	3	3	3	3	2	3	3	3	2	3	2	2	2	3
TOTAL	12	12	12	12	12	7	11	12	12	11	12	7	7	8	12
AVERAGE	3	3	3	3	3	1.75	2.75	3	3	2.75	3	1.75	1.75	2	3

Paper No. DSE-F8 Chemistry Paper No. XVI (Industrial Chemistry)

CO 1. After successful completion of the course, Student will be able to Learning and understanding the whole process of manufacture of sugar and byproducts of sugar industry.

CO 2. After successful completion of the course Student, will able to Learning and understanding of physicochemical principles of production of ammonia, sulfuric acid, nitric acid and sodium carbonate along with its manufacturing plant

CO 3. After successful completion of the course, Student will able to Understanding and learning the classification, synthesis and applications of various polymers. Understanding the petroleum Industry, fuels and need of use of ecofriendly fuels.

CO 4. After successful completion of the course, Student will able to Understanding and learning of nanotechnology including classification, optical properties, synthesis routes, characterization techniques and applications of nano-materials.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	3	3	1	2	3	3	3	3	2	1	2	1
CO2	3	3	3	3	3	2	3	3	3	3	3	1	2	2	2
CO3	3	2	3	3	3	1	3	3	3	3	3	2	2	2	2
CO4	3	3	3	3	3	1	3	3	3	2	3	2	2	2	1
TOTAL	12	11	12	12	12	5	11	12	12	11	12	7	7	8	6
AVERAGE	3	2.75	3	3	3	1.25	2.75	3	3	2.75	3	1.75	1.75	2	1.50

Laboratory Course (Practical's) (Phy- 60+Inorg- 65+Org- 60)

CO 1. After successful completion of the course, Student will be able to understand Gravimetric Analysis, titrimetric analysis Inorganic preparation and semi-micro qualitative analysis.

CO 2. After successful completion of the course, Student will able to understand organic Qualitative Analysis, Separation and identification of binary mixtures, organic estimations, Organic preparations, Derivative Preparation and TLC.

CO 3. After successful completion of the course, Student will able to understand chemical kinetics experiments with equal and unequal concentration, instrumental and non-instrumental experiments.

CO 4. After successful completion of the course, Student will able to understand the principal of Thin Layer Chromatography and its applications.

COs – POs& PSOs mapping matrix (1-low, 2-medium, 3-high, 0-No correlation)

PO → CO↓	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	3	3	3	1	2	1	2	3	3	3	2	1	2	2	2
CO2	3	3	3	3	2	1	3	3	3	3	3	2	1	1	3
CO3	3	3	3	3	3	3	3	3	3	3	3	1	2	1	2
CO4	3	2	3	3	3	2	3	3	3	2	3	2	3	2	2
TOTAL	12	11	12	10	10	7	11	12	12	11	11	6	8	6	9
AVERAGE	3	2.75	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.50	2	1.50	2.25



CO-PO&PSO Mapping Matrix for All Courses

SEM	Course with Paper No	Course Code	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PS O1	PS O2	PS O3	PSO 4	PS O5	PS O6	PSO7	PS O8	PS O9
I	Inorganic Chemistry-I	DSC-3A	3	3	3	3	2.75	2.50	3	3	3	3	2.75	2.25	2.50	3	1.25
	Organic Chemistry-II	DSC-4A	3	3	3	3	2.75	2.25	3	3	3	3	2.75	2	2	2.25	1.25
II	Physical Chemistry-III	DSC-3B	3	3	3	3	3	2.25	3	3	3	3	2.75	2	1.75	1.75	3
	Analytical Chemistry-IV	DSC - 4B	3	2.75	3	3	3	2.50	3	3	3	3	2.75	1.5	1.75	1.75	3
III	Physical Chemistry-V	DSC-C3	3	2.75	3	2.75	2.50	2.50	3	3	3	2.75	2.75	1.75	1.25	1.75	3
	Industrial Chemistry-VI	DSC-C4	3	2.75	3	2.75	2.50	2	3	3	3	2.75	2.75	1.25	1.25	1.75	3
IV	Inorganic Chemistry-VII	DSC-D3	3	2.75	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.50	2.50	2.50	3
	Organic Chemistry-VIII	DSC-D4	3	2.75	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.50	2.25	2	2.25
V	Inorganic Chemistry-IX	DSC-E5	3	2.50	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.75	2.25	2.25	2.50
	Organic Chemistry-X	DSC-E6	3	3	3	2.75	2.50	1.75	2.75	3	3	2.75	2.75	2.50	2.25	1.75	2.25
	Physical Chemistry-XI	DSC-E7	3	3	3	3	2.50	3	2.75	3	3	2.75	2.75	2.25	2.25	1.75	3
	Analytical Chemistry-XII	DSC-E8	3	3	3	3	2.50	2	2.75	3	3	2.75	2.75	1.5	2.25	1.75	2
VI	Inorganic Chemistry-XIII	DSC-F5	3	3	3	3	2.50	2.75	2.75	3	3	2.75	3	1.5	2.75	2.25	2.75
	Organic Chemistry-XIV	DSC-F6	3	3	3	3	2.75	2.50	2.75	3	3	2.75	3	1.5	2	1.75	1.75
	Physical Chemistry-XV	DSC-F7	3	3	3	3	3	1.75	2.75	3	3	2.75	3	1.75	1.75	2	3
	Industrial Chemistry-XVI	DSC-F8	3	2.75	3	3	3	1.25	2.75	3	3	2.75	3	1.75	1.75	2	1.50
AVERAGE			3	2.87	3	2.85	2.67	2.14	2.84	3	3	2.81	2.81	1.76	1.90	2.01	2.40

Correlations between contribution of Each Course for fulfillment of POs and PSOs are defined using numbers: 0 – No correlation; 1 – Small Correlation; 2 – Large Correlation and 3 – Full Correlation

Aundh Shikshan Mandal, Aundh
RAJA SHRIPATRAO BHAGAWANTRAO MAHAVIDYALAY, AUNDH
 DEPARTMENT OF CHEMISTRY

CHEMISTRY OUTCOME BASED EDUCATION PROCESS

Course- Program & Program Specific outcome Matrix:

College follows the rules and regulation of Affiliated University and implement the same programme wise CO, PO and PSO in teaching learning evaluation process. The Program Outcomes are developed through the curriculum (curricular/co-curricular extra-curricular activities). The program outcomes are attained through the course implementation. As an educator, one must know, **“to which POs & PSOs his/her course in contributing?”** So that one can design the learning experiences, select teaching method and design the tool for assessment. Hence, establishing the Course-PO matrix is essential step in the OBE. The course-program outcomes matrix indicates the co-relation between the courses and program outcomes. The CO-PO & PSO matrix is the map of list of **courses contributing to the development of respective POs & PSOs.**

The template is provided in the below table.

***- CO Metric that contributes to the Programme & Programme Specific Outcomes.**

SEM	Course with Paper No	Course Code	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PS O1	PS O2	PS O3	PSO 4	PS O5	PS O6	PSO7	PS O8	PS O9
I	Inorganic Chemistry-I	DSC-3A	3	3	3	3	2.75	2.50	3	3	3	3	2.75	2.25	2.50	3	1.25
	Organic Chemistry-II	DSC-4A	3	3	3	3	2.75	2.25	3	3	3	3	2.75	2	2	2.25	1.25
II	Physical Chemistry-III	DSC-3B	3	3	3	3	3	2.25	3	3	3	3	2.75	2	1.75	1.75	3
	Analytical Chemistry-IV	DSC -4B	3	2.75	3	3	3	2.50	3	3	3	3	2.75	1.5	1.75	1.75	3
III	Physical Chemistry-V	DSC-C3	3	2.75	3	2.75	2.50	2.50	3	3	3	2.75	2.75	1.75	1.25	1.75	3
	Industrial Chemistry-VI	DSC-C4	3	2.75	3	2.75	2.50	2	3	3	3	2.75	2.75	1.25	1.25	1.75	3
IV	Inorganic Chemistry-VII	DSC-D3	3	2.75	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.50	2.50	2.50	3
	Organic Chemistry-VIII	DSC-D4	3	2.75	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.50	2.25	2	2.25
V	Inorganic Chemistry-IX	DSC-E5	3	2.50	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.75	2.25	2.25	2.50
	Organic Chemistry-X	DSC-E6	3	3	3	2.75	2.50	1.75	2.75	3	3	2.75	2.75	2.50	2.25	1.75	2.25
	Physical Chemistry-XI	DSC-E7	3	3	3	3	2.50	3	2.75	3	3	2.75	2.75	2.25	2.25	1.75	3

	Analytical Chemistry-XII	DSC-E8	3	3	3	3	2.50	2	2.75	3	3	2.75	2.75	1.5	2.25	1.75	2
VI	Inorganic Chemistry-XIII	DSC-F5	3	3	3	3	2.50	2.75	2.75	3	3	2.75	3	1.5	2.75	2.25	2.75
	Organic Chemistry-XIV	DSC-F6	3	3	3	3	2.75	2.50	2.75	3	3	2.75	3	1.5	2	1.75	1.75
	Physical Chemistry-XV	DSC-F7	3	3	3	3	3	1.75	2.75	3	3	2.75	3	1.75	1.75	2	3
	Industrial Chemistry-XVI	DSC-F8	3	2.75	3	3	3	1.25	2.75	3	3	2.75	3	1.75	1.75	2	1.50
AVERAGE			3	2.87	3	2.85	2.67	2.14	2.84	3	3	2.81	2.81	1.76	1.90	2.01	2.40

2. Course Outcomes (for all courses):

The course outcomes are the statement that describes the knowledge & abilities developed in the student by the end of course (subject) teaching. The focus is on development of abilities rather than mere content. There can be 5 to 7 course outcomes of any course. These are to be written in the specific terms and not in general. **The list of Course Outcomes** is attached herewith.

3. Set Target levels for Attainment of Course Outcomes:

The course outcome attainment is assessed in order to track the graduates' performance w.r.t target level of performance. The CO-PO attainment is the tool used for continuous improvement in the graduates' abilities through appropriate learning & teaching strategies. In order to assess students' performance with respect to abilities (at the end of course teaching/by the end of program) the course outcome attainment are measured/calculated. In order to calculate the **Program Outcome attainment, the Course Outcome attainment** is calculated. Prior to that, the course-program outcome mapping is done.

4. Set Target level for Attainment of Program Outcomes:

The program outcome attainment is assessed in order to track the graduates' performance w.r.t target level of performance. The CO-PO attainment is the tool used for continuous improvement in the graduates' abilities through appropriate learning & teaching strategies. In order to assess students' performance with respect to abilities (at the end of course teaching/by the end of program) the course outcome attainment and program outcome attainment is measured/calculated. The program outcome attainment is governed by curricular, co-curricular and extra-curricular activities including feedback/survey from the stakeholders' participation. The direct method and indirect method is adopted to calculate the PO attainment. **The direct method implies the attainment by course outcomes contributing to respective program outcomes.** In addition, **indirect method is the satisfaction/feed-back survey of stakeholders.** In order to calculate the program outcome attainment, the course outcome attainment is calculated. Prior to that, the course-program outcome mapping is done. The set target level is the set benchmark to ensure the continuous improvements in the learners/ graduates' performance.

5. Course Attainment Levels:

- a. CO attainment is defined/set at three levels;
- b. The CO attainment is based on end term examination assessment and internal assessment;
- c. The CO attainment is defined at three levels in ascending order-
 - i. e.g. for end term and internal examination;

Sr.No	Level	CO Attainment
1	Level-1	30% students scored more than class average
2	Level-2	40% students score more than class average
3	Level-3	50% students score more than class average

d. The target level is set at Level-2. It indicates that, **the current target is level 2; 40% student's score more than class average**. The CO attainment is measured and the results are obtained. Based on the results of attainment, the corrective measures/remedial action are taken.

e. CO Attainment= 80% (Attainment level in end term examination) + 20% (Attainment level in internal examination).

6. Program attainment Level:

- a. PO attainment is defined at five levels in ascending order;
- b. **The PO attainment is based on the average attainment level of corresponding courses (Direct Method). And feed-back survey (Indirect method);**
- c. The PO attainment levels are defined/set as stated below;

Sr.No	Level	PO Attainment
1	Level-1	Greater than 0.5 and less than 1.0 (0.5>1)- Poor
2	Level-2	1.0>1.5-Average
3	Level-3	1.5>2.0-Good
4	Level-4	2.0>2.5-Very Good
5	Level-5	2.5>3.0 -Excellent

d. The PO attainment target level is set/defined at Level-3

It implies that, the department is aiming **at minimum level 3 (Good)** in the performance of abilities by the graduates. Based upon the results of attainment, the remedial measures are taken;

e. PO Attainment= 80% (Average attainment level by direct method) + 20% (Average attainment level by indirect method).

7. The Results of CO Attainment:

The Results of CO Attainment is provided in **Annexure-B**

FOR EXAMPLE:

COURSE CODE/TITLE: PHYSICAL CHEMISTRY-PAPER-IX

E.g. For end term and internal examination;

i. Level-1: 30% students scored more than class average

ii. Level-2: 40% students score more than class average;

iii. Level-3: 50% students score more than class average

Average Marks in External examination: 17.17 i.e. 17.00

% of Students score more than 17 is 27/52 i.e. 51.92% i.e. **Level-3**

Average Marks in Internal examination= 9.076 i.e. 9.00

% of Students score more than 9 is 43/52 i.e.82.69 %, i.e. **Level-3**

A (CO) PHY CHEM-IX= 80% (3) +20(3)

=2.4+0.6

= 3.0

Hence, the attainment level is Level-3, the set target level is Level-2, and therefore the CO is fully attained.

Table No. 1.0: CO Attainment Level

Course Title	CO Attainment Value	Target attainment Level	Fully Attained/Not Attained	Remedial Measures
Inorganic Chemistry-I		02	Fully Attained	
Organic Chemistry-II		02	Fully Attained	
Physical Chemistry-III		02	Fully Attained	
Analytical Chemistry-IV		02	Fully Attained	
Physical Chemistry-V		02	Fully Attained	
Industrial Chemistry-VI		02	Fully Attained	
Inorganic Chemistry-VII		02	Fully Attained	
Organic Chemistry-VIII		02	Fully Attained	
Inorganic Chemistry-IX		02	Fully Attained	
Organic Chemistry-X		02	Fully Attained	
Physical Chemistry-XI		02	Fully Attained	
Analytical Chemistry-XII		02	Fully Attained	
Inorganic Chemistry-XIII		02	Fully Attained	
Organic Chemistry-XIV		02	Fully Attained	
Physical Chemistry-XV		02	Fully Attained	
Industrial Chemistry-XVI		02	Fully Attained	

8. The Results of PO Attainment:

The Results of PO attainment are provided in Annexure-B

FOR EXAMPLE:

PO Attainment= 80% (Average attainment level by direct method) + 20% (Average attainment level by indirect method).

$$\mathbf{A (PO) a = 80\% (3+3+3+2.2+3+3+2.2+2.2)/8 + 20 \% (2.73)}$$

$$\mathbf{= 80 \% (2.70) + 20 \% (2.73)}$$

$$\mathbf{= 2.16+0.546 =2.706}$$

I.e. Level-5 (Excellent)

The Target Level is Level-3. Hence, PO is attained.

INDIRECT METHOD- Feedback survey Questionary is provided in Annexure-C

Table No. 2.0 PO Attainment Level

PO/PSO	PO Attainment Value	TARGET ATTAINMENT LEVEL	Fully Attained/Not attained	Remedial Measures
B.Sc. Chemistry	2.70 (Level 5-2.5>3.0-Excellent)	3	Fully Attained	NA

9. Planned Actions for Course Attainment: Not applicable.

10. Planned Actions for Program Outcome Attainment: Not Applicable.

ANNEXURE-B

RESULTS OF CO-PO & PSO ATTAINMENT

SEM	Course with Paper No	Course Code	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PS O1	PS O2	PS O3	PSO 4	PS O5	PS O6	PSO7	PS O8	PS O9
I	Inorganic Chemistry-I	DSC-3A	3	3	3	3	2.75	2.50	3	3	3	3	2.75	2.25	2.50	3	1.25
	Organic Chemistry-II	DSC-4A	3	3	3	3	2.75	2.25	3	3	3	3	2.75	2	2	2.25	1.25
II	Physical Chemistry-III	DSC-3B	3	3	3	3	3	2.25	3	3	3	3	2.75	2	1.75	1.75	3
	Analytical Chemistry-IV	DSC -4B	3	2.75	3	3	3	2.50	3	3	3	3	2.75	1.5	1.75	1.75	3
III	Physical Chemistry-V	DSC-C3	3	2.75	3	2.75	2.50	2.50	3	3	3	2.75	2.75	1.75	1.25	1.75	3
	Industrial Chemistry-VI	DSC-C4	3	2.75	3	2.75	2.50	2	3	3	3	2.75	2.75	1.25	1.25	1.75	3
IV	Inorganic Chemistry-VII	DSC-D3	3	2.75	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.50	2.50	2.50	3
	Organic Chemistry-VIII	DSC-D4	3	2.75	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.50	2.25	2	2.25
V	Inorganic Chemistry-IX	DSC-E5	3	2.50	3	2.50	2.50	1.75	2.75	3	3	2.75	2.75	1.75	2.25	2.25	2.50
	Organic Chemistry-X	DSC-E6	3	3	3	2.75	2.50	1.75	2.75	3	3	2.75	2.75	2.50	2.25	1.75	2.25
	Physical Chemistry-XI	DSC-E7	3	3	3	3	2.50	3	2.75	3	3	2.75	2.75	2.25	2.25	1.75	3
	Analytical Chemistry-XII	DSC-E8	3	3	3	3	2.50	2	2.75	3	3	2.75	2.75	1.5	2.25	1.75	2
VI	Inorganic Chemistry-XIII	DSC-F5	3	3	3	3	2.50	2.75	2.75	3	3	2.75	3	1.5	2.75	2.25	2.75
	Organic Chemistry-XIV	DSC-F6	3	3	3	3	2.75	2.50	2.75	3	3	2.75	3	1.5	2	1.75	1.75
	Physical Chemistry-XV	DSC-F7	3	3	3	3	3	1.75	2.75	3	3	2.75	3	1.75	1.75	2	3
	Industrial Chemistry-XVI	DSC-F8	3	2.75	3	3	3	1.25	2.75	3	3	2.75	3	1.75	1.75	2	1.50
AVERAGE			3	2.87	3	2.85	2.67	2.14	2.84	3	3	2.81	2.81	1.76	1.90	2.01	2.40

ANNEXURE-C

Indirect Method -Feedback Survey Questionary

Q-1 How many percent the syllabus of all the courses was successfully completed by the teacher?

1. 0 -20 (Level-1-Poor)
2. 20-40 (Level-2-Average)
3. 40-60 (Level-3-Good)
4. 60-80 (Level-4-Very good)
5. 80-100 (Level-5-Excellent)

Q-2 Do you think that the Syllabus was adequate to the Courses you learn?

1. Level-1-Poor
2. Level-2-Average
3. Level-3-Good
4. Level-4- Very Good
5. Level-5-Excellent

Q-3 Do you think that there is sufficient time is available to conduct examination for coverage of all the units in Syllabus.

1. Level-1-Poor
2. Level-2-Average
3. Level-3-Good
4. Level-4- Very Good
5. Level-5-Excellent

Q-4 Do you think that Teacher uses ICT in teaching Learning Process of all Courses.

1. 0 -20 (Level-1-Poor)
2. 20-40 (Level-2-Average)
3. 40-60 (Level-3-Good)
4. 60-80 (Level-4-Very good)
5. 80-100 (Level-5-Excellent)

Q-5 what do you think about the Quality of teacher who teach you all the Courses.

1. Level-1-Poor
2. Level-2-Average
3. Level-3-Good
4. Level-4- Very Good
5. Level-5-Excellent

Raja Shripatrao Bhagawantrao Mahavidyalaya, Aundh

Course Outcomes of BA (Geography)

1st Year Physical Geography

1. Understand the effect of rotation of revolution the Earth
2. Know the internal structure of the earth
know the importance of longitudes & latitudes International Date line and Standard time
3. Understand interior structure of the earth
4. Understand Theory regarding of Origin of Continents and oceans
5. Study the formation of Rocks
Understand the work of internal and external forces and their associated landforms.
6. Understand the importance of Atmosphere
7. Understand the composition of atmosphere

Human Geography

1. Understand the relationship of man and environment
2. Studies of races of man kinds.
3. Understand the modes of life of Eskimo, pigmy, Gonad ,Bhil And Nagas.
4. Importance of Right to Information Acts.

2nd Year

Soil Geography

1. Importance of soil in food Production.
2. To study the soil forming process.
3. To understand Chemical and physical properties of soil.
4. Know soil types of India.
5. Understand food Security and soil quality.

Resource Geography

- 1 To study the importance of Resource
- 2 To study the types of resources
- 3 Understand the degradation of resources
- 4 Know the conservation of natural resources

Agricultural Geography

1. Examining the introduction to agriculture, nature, scope, significance and development of agriculture geography, approaches to study.
2. Understand the fundamental concept, land use, crops, agricultural production and envelopment and study the determinants of agricultural activities, physical determinants, and socio-economic determinants.
3. To understand the agricultural system its meaning and concept, whittlesey's classification of agricultural system, types of agricultural, study of the following types of agricultural in respect of area, salient features and their problems.
4. Understand the agricultural regionalization and modes in agricultural geography and their classification of agricultural models and some theories.

Understand the agricultural statistics & land use survey techniques and agrarian revolution, meaning & merit and demerit of green revolution and white revolution

Oceanography

1. Understand importance of ocean.
2. Knowledge about effect of ocean Currents.
3. Understand human impacts on Ocean.
4. Study about types of tides.

Political Geography

- 1) The students are fully aware about the Political geography as a fundamental branch of Human Geography.
- 2) The students are familiarized with the basics and fundamental concepts and theories of Political Geography.
- 3) The students are aware about resource conflicts and politics of displacement.

Fundamentals of Map Making and Map Interpretation

1. In depth understanding the map, concept of scale and projection.
2. Detailed knowledge about the analysis of landforms and its identification.
3. The students are deeply aware about basic information to the students about S.O.I. topomaps and I.M.D. weather maps and obtained the skills about map interpretation.
4. The students are deeply familiar with different cartographic techniques and methods used for representation of demographic and physio- socio-economic database

Advanced Tools, Techniques & Field Work in Geography

- 1) In depth understanding the importance of field work and advanced Techniques in Geography.
- 2) The students are trained to implement modern tool and techniques in Geography.
- 3) Detailed knowledge about the use of computer for analysis of Geographical data.
- 4) The students are deeply aware about the basics and trained in instrumental survey.
- 5) The students are deeply familiar with computer, GIS, GPS and Remote Sensing.

Program Specific Outcomes

On Completion of the BA (Geography) Students are able to:

1. Serve as a Geographer
2. Work as a teacher in schools and high schools
3. Serve as conservator in forest, Soil, Agriculture Departments.
4. Work in disaster and water resources management.
5. Serve in forest department as forest conservator.
6. Serve in cartographer in map making divisions of Government.
7. Work in NGOs.
8. Can Prepare for Competitive exams.



B.A. (HINDI)

Programmes Specific Outcomes (PSO's)

1. Developing reading, writing, speaking and listening skills.
2. Availing the job opportunities in translation.
3. Increasing the critical attitude about literary writing.
4. Creating an interest in literature.
5. Imbuing the literary research attitude.

Course Outcomes (CO's)

Course Outcomes of BA (HINDI)

1st Year

प्रश्नपत्र 1 सत्र 1

'हिंदी कविता'

- 1 छायावादी, प्रगतिवादी, प्रयोगवादी एवं समकालीन कविता से परिचित हो जायेंगे।
- 2 राष्ट्रीय एकता की भावना से औत्प्रेत हो जायेंगे।
- 3 कवियों के व्यक्तित्व, कृतित्व एवं विचारधारा से अवगत हो सकेंगे।
- 4 समकालीन समस्याएँ, आपसी समन्वय, सहिष्णुता, भ्रष्टशासन व्यवस्था से रूबरू हो जायेंगे।
- 5 आम आदमी की पीडा, भ्रमभंग, शोषण, अन्याय, राजनीतिक तिकडमबाजी, अन्याय, अत्याचार तथा उपभोक्तावादी संस्कृति से अवगत हो जायेंगे।
- 6 गुरुनिष्ठा, समर्पण, अर्थकेंद्रित व्यवस्था, बाजारवाद से परिचित होंगे।
- 7 काव्य के सौंदर्य तथा प्रासंगिकता को समझ पायेंगे।

बी ए भाग 1 प्रश्नपत्र 2 'साहित्य जगत'

- 1 साहित्य की विविध विधाओं से परिचित हो जायेंगे।
- 2 शिक्षा व्यवस्था में बदलाव की आवश्यकता को समझ पायेंगे।
- 3 साहित्यकारों का जीवन परिचय संक्षेप प्राप्त कर सकेंगे।
- 4 मानव जीवन के विभिन्न नैतिक मूल्य, प्रकृति, पर्यावरण के संरक्षण के महत्व को समझ जायेंगे।
- 5 सभी विधाओं की विशेषताओं से रूबरू हो जायेंगे।
- 6 मानवी जीवन से संबंधित समस्याओं से अवगत हो जायेंगे।
- 7 नारी का शोषण, नारीका परिवार एवं समाज में क्या स्थान है यह समझ सकेंगे।
- 8 आधुनिक युग में परिवर्तित रिश्ते, नाते तथा मानवीय संबंधों के महत्व को समझ सकेंगे।



- 9 गाँव तथा शहर के अंतर को समझ पायेंगे ।
- 10 किसान मजदूर की दयनीय अवस्था का चित्रण देख पायेंगे।

2nd Year

प्रश्नपत्र 3 'अस्मितामूलक विमर्श और हिंदी गद्य साहित्य'

- 1 साहित्य के विभिन्न विधाओं के स्वरूप तथा तत्व को समझ पायेंगे।
- 2 सामाजिक मान्यताएँ, आचार, विचार, व्यवहार ज्ञान से अवगत हो जायेंगे।
- 3 मानव जीवन की विभिन्न समस्याओं से परिचित हो जायेंगे ।
- 4 ग्रामजीवन के सामाजिक, आर्थिक, राजनीतिक, धार्मिक, रीति-रिवाजों से परिचित होंगे।
- 5 कथा साहित्य तथा कथेतर साहित्य से परिचित होंगे।
- 6 पारिवारिक संबंधों में 'गलतफहमी', 'अविश्वास', 'मनुष्य को कहा से कहा ले जाती है' इससे अवगत हो जायेंगे ।
- 7 समय का महत्व समझ पायेंगे।
- 8 विभिन्न लेखकों के व्यक्तित्व, कृतित्व और विचारधारा से प्रभावित होंगे।
- 9 सरकारी कामकाज नीती का पर्दाफाश देख सकेंगे ।
- 10 राष्ट्रीय अस्मिता की पहचान को समझ पायेंगे

प्रश्नपत्र 4 'हिंदी संत काव्य तथा राष्ट्रीय काव्यधारा'

- 1 मध्यकालीन काव्य से परिचित होंगे।
- 2 संतों के जीवन से अवगत हो जायेंगे ।
- 3 संतों का समाज सुधारक रूप समझ पायेंगे ।
- 4 निर्गुण-सगुण काव्यधारा से अवगत हो जायेंगे।
- 5 निर्गुण सगुण भक्ती भावना को समझ सकेंगे
- 6 दलित विमर्श तथा ग्रामजीवन से रूबरू हो जायेंगे।

प्रश्नपत्र 5 रोजगार परक हिंदी

- 1 अंकों की गिनती के सही उच्चारण से अवगत हो जायेंगे ।
- 2 पारिभाषिक शब्दावली का अर्थ, महत्व तथा प्रासंगिकता से अवगत हो जायेंगे ।
- 3 मुहावरे और उनके अर्थ को समझ पायेंगे।



- 4 रोजगार के कौशल प्राप्त कर लेंगे।
- 5 विभिन्न कार्यालयों के लिए पत्रलेखन को समझ पायेंगे।
- 6 रोजगार परक विविध पदों की जानकारी हासिल कर लेंगे।
- 7 अनुवाद का स्वरूप, महत्व, प्रकार आदि से परिचित होंगे।

प्रश्नपत्र 6

'अस्मिता मूलक विमर्श और हिंदी पद्य साहित्य'

- 1 ममता कालिया की जीवन परिचय से अवगत हो जायेंगे।
- 2 ममता कालिया के व्यक्तित्व, कृतित्व तथा विचारधारा से प्रभावित हो जायेंगे।
- 3 पौराणिक कथा से परिचित हो जायेंगे।
- 4 खंडकाव्य के उद्देश्य से परिचित होंगे।
- 5 पौराणिक पात्र के चरित्र की विशेषताओं को समझ सकेंगे।

3rd Year

प्रश्नपत्र 7 विधा विशेष का अध्ययन (दिल्ली ऊंचा सूनती है- नाटक)

- 1 नाटक का स्वरूप एवं तत्वों से परिचित हो जायेंगे।
- 2 कुसुम कुमार के जीवन परिचय से अवगत हो जायेंगे।
- 3 कुसुमकुमार के कृतित्व को समझ सकेंगे।
- 4 कुसुम कुमार के नाटकों में चित्रित पारिवारिक जीवन, अर्थाभाव, समस्याएँ आदि से परिचित हो जायेंगे।
- 5 कुसुम कुमार के नाटकों में चित्रित मानवीय रिश्ता, नाते, सरकारी कार्यालय में काम करने वालों की प्रवृत्ति आदि से परिचित होंगे।

प्रश्नपत्र 8 साहित्यशास्त्र

- 1 साहित्य या काव्य के स्वरूप तथा तत्वों से अवगत हो जायेंगे।
- 2 काव्य के विभिन्न प्रकारों से परिचित हो जायेंगे।
- 3 काव्य प्रयोजन और काव्य प्रेरणा के अंतर को समझ पायेंगे।
- 4 शब्दशक्ति, काव्य गुण, काव्य दोष आदि से अवगत हो जायेंगे।



- 5 अलंकार का काव्य में क्या महत्व है? यह समझ सकेंगे।
- 6 रस का स्वरूप, रस के अंग, रस के भेद आदि का ज्ञान होगा।

प्रश्नपत्र 9 हिंदी साहित्य का इतिहास

- 1 आदिकालीन नामकरण से परिचित होंगे।
- 2 आदि कालीन सामाजिक, राजनीतिक परिस्थिति से अवगत होंगे।
- 3 पृथ्वीराज रासो रसो की जानकारी प्राप्त कर सकेंगे।
- 4 भक्तिकालीन सामाजिक, राजनीतिक परिस्थिति का ज्ञान होगा।
- 5 निर्गुण और सगुण भक्ति धारा की विशेषताओं की जानकारी मिलेगी।
- 6 कबीर, सूरदास तुळसीदास के साहित्य में समाजसुधारक की भावना से प्रेरित होंगे।

प्रश्नपत्र 1 प्रयोजनमूलक हिंदी

- 1 पारिभाषिक शब्दावली का अर्थ, परिभाषा, स्वरूप आदि से परिचित होंगे।
- 2 संचार माध्यम संबंधी अंग्रेजी शब्दों के हिंदी पर्यायवाची शब्दों को जान सकेंगे।
- 3 मुद्रित जनसंचार माध्यम से परिचित होंगे।
- 4 समाचार पत्र, पत्रिकाएँ, विज्ञापन, रिपोर्टाज तथा उद्घोषणा पत्र का महत्व समझ सकेंगे।
- 5 विज्ञापन का स्वरूप, प्रकार तथा विज्ञापनों की विशेषताओं की जानकारी

प्रश्नपत्र 11 भाषाविज्ञान

- 1 भाषा के व्यापक एवं सीमित रूप को समझ सकेंगे।
- 2 भाषा एक सांकेतिक व्यवहार है इस बात से अवगत हो जायेंगे।
- 3 भाषा की विशेषताएँ, भाषा की परिवर्तनशीलता के कारण आदि से परिचित हो जायेंगे।
- 4 भाषा के विविध रूप समझ सकेंगे।
- 5 हिंदी भाषा के विविध बोलियों का ज्ञान होगा।
- 6 भाषा की शुद्धता के प्रति जागृत होंगे।
- 7 लिपी विकास तथा नागरी लिपी की विशेषताओं से परिचित हो जायेंगे।
- 8 हिंदी भाषा का उद्भव और विकास शब्दसमूह आदि से अवगत हो जायेंगे।



9 भाषा की उत्पत्ति संबंधी विविध वादों की जानकारी मिलेगी ।

10 विश्व मे हिंदी का स्थान क्या है ? यह समझ सकेंगे ।

प्रश्नपत्र 12 विधा विशेष का अध्ययन - अंतिम साक्ष्य (उपन्यास)

1 चंद्रकांता के जीवन का परिचय प्राप्त कर सकेंगे।

2 चंद्रकांता के कृतित्व को समझ पायेंगे।

3 ग्रामजीवन से परिचित हो जायेंगे।

4 मानवीय रिश्ते 'नाते' मानव जीवन की विभिन्न समस्याएँ, पारिवारिक जीवन में एक गलती भी पारिवारिक जीवन कैसे तहस नहस करती यह है समझ सकेंगे।

5 विभिन्न पात्रों की चारित्रिक विशेषताओं से अवगत होंगे।

प्रश्नपत्र 13 साहित्यशास्त्र

1 महाकाव्य की भारतीय तत्वों से अवगत होंगे ।

2 प्रगीत का स्वरूप, तत्व, प्रगीत के भेद, विशेषताएँ आदि से परिचित होंगे ।

3 एकांकी, कहानी, उपन्यास आदि के स्वरूप का ज्ञान प्राप्त कर सकेंगे।

4 रेखाचित्र, जीवनी, यात्रावृत्त आदि विधाओं का स्वरूप तथा विशेषताएँ मालूम होगी ।

5 आलोचना के प्रकार तथा आलोचक के गुण को समझ सकेंगे ।

प्रश्नपत्र 14 हिंदी साहित्य का इतिहास

1 रीतिकाल के नामकरण से अवगत होंगे।

2 रीतिकालीन सामाजिक, राजनीतिक परिस्थिति का परिचय होगा।

3 भूषण केशवदास का सामान्य परिचय मिलेगा ।

4 आधुनिक कालीन सामाजिक राजनीतिक परिस्थिति का परिचय मिल जायेगा।

5 कहानी, उपन्यास, एकांकी, छायावाद, प्रयोगवाद, नयी कविता का परिचय मिलेगा।

प्रश्नपत्र 15 प्रयोजनमूलक हिंदी

1 पारिभाषिक शब्दावली का अर्थ, पारिभाषिक शब्द का स्वरूप आदि से परिचित होंगे।

2 कार्यालय तथा बैंक संबंधी पारिभाषिक शब्दावली से परिचित होंगे ।



3 फेसबुक व्हाट्सअप से परिचित हो जायेंगे।

प्रश्नपत्र 16 भाषा विज्ञान और हिंदी भाषा

- 1 भाषा विज्ञान का सामान्य परिचय प्राप्त होगा।
- 2 भाषा विज्ञान के विभिन्न अंगों की जानकारी मिलेगी।
- 3 भाषाविज्ञान का अन्य ज्ञान विज्ञान से किस तरह का संबंध है यह समझ सकेंगे।
- 4 विरामचिन्ह का प्रयोग समझ सकेंगे।
- 5 कारक, पदक्रम, मानक वर्तनी आदी के नियमों से परिचित हो जायेंगे।

Program Specific Outcomes

On Completion of the BA (HINDI) Students are able to:

- 1 अनुवाद कार्य में निपुण हो जायेंगे।
- 2 पारिभाषिक शब्दावली का ज्ञान होगा।
- 3 अनुसंधान की दृष्टि प्राप्त होगी।
- 4 सरकारी कार्यालयों में नौकरी करने के लिए काबिल हो जायेंगे।
- 5 स्कूल, कॉलेज में अध्यापक के रूप में नौकरी हासिल कर सकेंगे।
- 6 दुभाषिया बन सकते हैं।
- 7 विभिन्न पत्र पत्रिकाओं टी व्ही चैनलों पर संवाददाता के रूप में काम कर सकते हैं।
- 8 लेखक बन सकते हैं।
- 9 रेडियो जाँकी बन सकते हैं।
- 10 प्रूफ रीडर बन सकते हैं।
- 11 विभिन्न प्रतियोगिता परीक्षाओं की जानकारी हासिल कर सकेंगे।
- 12 मराठी, अंग्रेजी का हिंदी में अनुवाद कर सकेंगे।
- 13 नेतृत्व गुण विकसित करने का अवसर मिलेगा।
- 14 हिंदी अनुवादक, राजभाषा अधिकारी, अनुसंधान अधिकारी, निवेदक, क्रीडा समालोचक, गीतकार बन सकते हैं।
- 15 ब्लाग लिख सकते हैं तथा अर्थाजन कर सकेंगे।

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Head

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Mawar
PRINCIPAL

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