Chinmaya
Vishwa Vidyapeeth

Deemed to be University

SYLLABUS



Admission to
Doctoral Research
Programmes

Ph.D

# CVV RESEARCH ENTRANCE EXAMINATION

[CVVREE]

Rooted in Heritage. Reaching out to the Future.

# Content

**Syllabus for CVV RESEARCH ENTRANCE EXAMINATION (CVVREE) – 2025 for All Discipline except Linguistics and Literary Studies Discipline**

a. Part I- Research Methodology (Common for all Specializations except Linguistics and Literary Studies)

b. Part-II Core subject (choose any one of the subject)

i. Hindustani Music (Vocal/ Instrumental)

ii. Karnatic Music (Vocal/ Instrumental)

iii. Tabla/Pakhawaj

iv. Mathematics

v. Physics

vi. Chemistry

vii. Computer Science and Engineering

viii. Electronics and Communication Engineering

ix. Education

x. Psychology

xi. Commerce and Management

**Syllabus for CVV RESEARCH ENTRANCE EXAMINATION (CVVREE) – 2025 for Linguistics and Literary Studies Discipline**

a. Part I- Research Methodology (Common for all Linguistics and Literary Studies)

b. Part-II Core subject (choose any one of the subject)

i. Sanskrit

ii. Hindi

iii. English

# All Discipline except Linguistics and Literary Studies Discipline

## RESEARCH METHODOLOGY

**(Common for all Specializations except Linguistics and Literary Studies)**

**Meaning of Research:** Objectives of Research, Types of Research, Research Process, Problem Statement, Research Design, Approaches to Research-Quantitative, Qualitative Approach, Exploratory, Confirmatory Research, Experimental and Theoretical Research.

**Problem Formulation:** Conducting Literature Review, Information Sources (Books, monographs, reviews, blogs, etc.), Information Retrieval, Role of libraries in Information Retrieval, Tools for identifying literature (digital resources and print media), Indexing and abstracting services, Citation indexes, Summarising the Review, Critical Review, Identifying Research Gap, Conceptualising and Hypothesising the research gap.

**Research Design:** Experimental / Simulation/ Theoretical /Empirical Research, Cause effect relationship, Development of Hypothesis, Measurement Systems Analysis, Validity and Reliability, Statistical Design of Experiments, Field Experiments, Data/Variable Types & Classification, Data collection - Methods and Tools.

**Data Analysis and Interpretation:** Sampling, Sampling Error, Statistical Methods/Tools - Measures of Central Tendency and Variation, Test of Hypothesis- z test, t test, F test, ANOVA, Chi square, correlation and regression analysis, Error Estimation.

**Writing Research Articles and Thesis:** Data Presentation- Types of tables and illustrations, Guidelines for writing the abstract, introduction, methodology, results and discussion, conclusion sections of a manuscript. References – Styles and methods, Citation and listing system of documents. Plagiarism. Ethical considerations in Research.

# PART -II

## Syllabus for Core Subject – Ph.D. Admission Entrance Examination

**(Choose one subject code of core area)**

## Syllabus | Hindustani Music (Vocal/ Instrumental)

1. **Technical-Terminology:** Nada, Shruti, Swara, Grama-Moorchana, Jati, Thata (Mela), Raga, Tana, Gamak, Gandharva, Gaan, Margi-Deshi, Giti, Nibaddha, Anibaddha, Varna, Alankar, Melody, Harmony, SwarSanwad, Musical Scales, Musical Intervals, Western and South Indian terminology and their explanation, Alpatva-Bahutva, Avirbhav-Tirobhav, Laya, Tala, Matra, Avartan, Vibhag, Theka, Kriti, Kirtana, Ragmalika, Tillana, Javeli, Maseetkhani and Rajakhani Gat.

2. **Applied Theory:** Detailed and critical study of Ragas, classification of Ragas, i.e. Grama Raga vargikaran, Mela Raga Vargikaran, Raga-Ragini Vargikaran, Thata Raga Vargikaran, and RagangaVargikaran, Time-theory of Ragas, Application of melody and harmony in Indian Music, Placement of Shuddha and VikritSwaras on Shruties in ancient, medieval and modern period. Detailed knowledge of prevalent talas of Hindustani music, knowledge of tala Dashpranas and Margi and Deshitalas of ancient period.

3. **Compositional forms and their Evolution:** Prabandha, Dhrupad, Dhamar, Sadra, Khyal, Thumri, Tappa, Tarana, Chaturang, Trivat, Vrindagana, VrindaVadan.

4. Gharanas and Gayaki Origin, development and contribution of Gharanas in preserving and promoting Hindustani classical music (Vocal-Instrumental).

5. **Contribution of Scholars to Indian Music** and the study of Important Granthas (treatises). Natya-Shastra, Brihaddeshi, Dattilam, Sangeet-Makarand, Geet-Govinda, Sangeet Ratnakar, Rag-Tarangini, Swara-Mela-Kalanidhi, Sadraga-Chandrodaya, Sangeet Raj, Sangeet-Parijat, Hridya Prakash, Chaturdandi Prakashika, Rag-Tatva-Vivodh, Raga-Darpan, Nagmat-eAsaphi, Bhatkhande Sangeet Shastra (Vol.1-4), Rag-Vigyan, Sangeetanjali, Sangeet Chintamani etc.

6. **Historical Perspective of Music**: A study of the historical development of Hindustani music (Vocal, Instrumental). Contribution of Western Scholars to Indian Music.

7. **Aesthetics:** Its origin, expression and appreciation: Principle of aesthetics and its relation to Indian Music. Rasa theory and its application to Indian Music. Relationship of Musical aesthetics and Rasa to Hindustani Music (Vocal, Instrumental). Inter-relationship of Fine Arts with special reference to Rag-Ragini Paintings; Dhyan of Ragas and others.

8. **Instruments:** Origin, development, material used and structure of various instruments and their well-known exponents of Hindustani Music (Vocal, Instrumental). Classification of Instruments of Hindustani Music.

9. **Folk Music:** General study of the folk music of various regions of India like Uttar Pradesh, Rajasthan, Haryana,Punjab, Maharashtra, Bengal and South India.

10. **Music Teaching and Research Methodology:** The methodologies of music research, preparing synopsis, data collection, field work, writing project reports, finding bibliography, Footnotes, reference material etc. with reference to Hindustani music.

## Syllabus | Carnatic Music (Vocal/ Instrumental)

1. **Technical-Terminology:** Nada, Shruti, Swara, Grama-Moorchana, Jati, Raga, Tala, Gamaka, Margi, Desi, VadiSamvadi, Anuvadi, Vivadi, Tala, Laya, Kalapramana, Nibaddha, Anibaddha, Alankara, Gandharva, Tana, Prabandha, Alapa, Alapti, Melody, Harmony and Hindustani Music terminology and their explanation: Avirbhav, Tirobhav, Theka, Vibhag, Maseetkhani and Rajakhani Gat.

2. **Applied theory:** Detailed and critical study of Ragas, classification of Ragas in general, Scheme of 72 Melakartas, Scheme of 35 talas, Model shift of Tonic, Application of Gamakas, Advanced knowledge of Musical prosody and rhetorical beauties met within the sahitya of musical compositions – Gamakam, prasa and yati, Knowledge about the formation of 175 and 108 system of talas, rare talas figuring in Tiruppughazh, knowledge of Tala Dasapranas.

3. **Musical Forms** – Origin and explanation Gitam, Jatiswaram, Swarajati, Varnam, Keertana, Kriti, Ragam – Tanam – Pallavi, Padam, Javali, Tillana, Bhajan. Musical forms in Hindustani Music: Dhrupad, Dhamar, Khayal, Thumri, Tappa, Tarana.

4. **An in-depth study** of the Lakshanagranthas Natyasastra, Silapadikaram, Brihaddesi, Sangita Ratnakara, Sangita Sara, Raga Vibhodha, Swaramela Kalanidhi, Chaturdandi Prakashika, Sangita Sudha, Sangrachudamani, Sangita Sampradaya pradarshini.

5. **Prominent composers of Karnatic Music and their contribution:** Purandara Dasa, Musical Trinity – Tyagaraja, Dikshitar, Syama Sastri, Swati Tirunal, Muttaiah Bhagavatar, Patnam Subramanya Iyer, Bhadrachala Ramadas, Poochi Srinivasa Iyengar, Subbaraya Sastri, Gopala Krishna Bharti. Prominent composers of Hindustani Music: Swami Haridas, Tansen, Amir Khusrau, Bhatkhande, Vishnu Digambar Paluskar.

6. **Historical Perspective of Music:** A study of the historical development of Karnatic music - Vocal, Instrumental – Veena, Violin, Mridangam. Contribution and life history of the following Western composers to Indian Music: Beethoven, Bach, Mozart.

7. **Aesthetics:** Its origin, expression and appreciation: Principle of aesthetics and its, relation to Indian Music. Rasa theory and its application to Indian Music. Relationship of Musical aesthetics and Rasa to Karanatic Music (Vocal, Instrumental). Aesthetical elements contained in the concepts and terms of Indian Musicology i.e. swara, sthaya, gamaka, alankara, raga, tala etc. Aesthetical elements found in the musical forms of Karnatic Music, Musical prosody, Decorative angas, Mudras figuring in musical compositions.

8. **Instruments:** Origin, evolution and structure of various concert instruments and their well known exponents of Karnatic Music (Vocal, Instrumental).Classification of Instruments of Karnatic Music, construction and playing techniques of concert instruments.

9. **Folk Music:** General study of the folk music and dance of various regions of South India like Tamil Nadu, Kerala, Andhra Pradesh and Karnataka. Musical forms pertaining to the field of classical dances of south india. A knowledge of GeyaNataka, Nritya Nataka, Bhagavara Mela, Kuchchipudi, Yakshagana, Kathakali and Krishnattam.

10. **Music Teaching and Research Methodology:** Knowledge of terms used in research. The methodologies of music research, preparing synopsis, data collection, project reports, bibliography, footnotes, interviews, appendix, primary, secondary sources etc

## Syllabus | Tabla/Pakhawaj

**Percussion Music (Tabla/Pakhawaj)**

- Origin and development of Percussion Music
- Instruments as per Musicological Texts (Tabla/Pakhawaj)
- Knowledge of different Percussion Instrument Gharanas (Tabla/Pakhawaj)
- Detailed knowledge of own Instrument and a few other recognized percussion Instruments.
- Knowledge of Musicology and rudiments of Instrumental, Percussion and Vocal Music.

## Syllabus | Mathematics

**UNIT I: Analysis**

Elementary set theory, finite, countable and uncountable sets, Real number system as a complete ordered field, supremum, infimum, Sequences and series, convergence, limsup, liminf. Continuity, uniform continuity, differentiability, mean value theorem. Sequences and series of functions, uniform convergence. Riemann sums and Riemann integral, Improper Integrals. Monotonic functions, types of discontinuity, functions of bounded variation, Lebesgue measure, Lebesgue integral. Functions of several variables, directional derivative, partial derivative, derivative as a linear transformation, inverse and implicit function theorems. Metric spaces, compactness, connectedness. Normed linear Spaces. Spaces of continuous functions as examples.

**UNIT II: Linear Algebra**

Vector spaces, subspaces, linear dependence, basis, dimension, algebra of linear transformations. Algebra of matrices, rank and determinant of matrices, linear equations. Eigenvalues and eigenvectors, Cayley-Hamilton theorem. Matrix representation of linear transformations. Change of basis, canonical forms, diagonal forms, triangular forms, Jordan forms. Inner product spaces, orthonormal basis. Quadratic forms, reduction and classification of quadratic forms.

**UNIT III: Complex Analysis**

Algebra of complex numbers, the complex plane, polynomials, power series, transcendental functions such as exponential, trigonometric and hyperbolic functions. Analytic functions, Cauchy-Riemann equations. Contour integral, Cauchy's theorem, Cauchy's integral formula, Liouville's theorem, Maximum modulus principle, Schwarz lemma, Open mapping theorem. Taylor series, Laurent series, calculus of residues. Conformal mappings, Mobius transformations.

**UNIT IV: Algebra**

Permutations, combinations, pigeon-hole principle, inclusion-exclusion principle, derangements. Fundamental theorem of arithmetic, divisibility in Z, congruences, Chinese Remainder Theorem, Euler's Ø- function, primitive roots. Groups, subgroups, normal subgroups, quotient groups, homomorphisms, cyclic groups, permutation groups, Cayley's theorem, class equations, Sylow theorems. Rings, ideals, prime and maximal ideals, quotient rings, unique factorization domain, principal ideal domain, Euclidean domain. Polynomial rings and irreducibility criteria. Fields, finite fields, field extensions, Galois Theory.

**UNIT V: Ordinary Differential Equations, Partial Differential Equations**

Existence and uniqueness of solutions of initial value problems for first order ordinary differential equations, singular solutions of first order ODEs, system of first order ODEs. General theory of homogeneous and nonhomogeneous linear ODEs, variation of parameters, Sturm-Liouville boundary value problem, Green's function.

Lagrange and Charpit methods for solving first order PDEs, Cauchy problem for first order PDEs. Classification of second order PDEs, General solution of higher order PDEs with constant coefficients, Method of separation of variables for Laplace, Heat and Wave equations.

**UNIT VI: Numerical Analysis**

Numerical solutions of algebraic equations, Method of iteration and Newton-Raphson method, Rate of convergence, Solution of systems of linear algebraic equations using Gauss elimination and Gauss-Seidel methods, Finite differences, Lagrange, Hermite and spline interpolation, Numerical differentiation and integration, Numerical solutions of ODEs using Picard, Euler, modified Euler and Runge-Kutta methods.

## Syllabus | Physics

**UNIT I: Classical Mechanics:** Newtonian mechanics: Laws of motion, conservation laws, work and energy, Lagrangian and Hamiltonian formalisms: Principle of least action, symmetries, and conservation laws, Central force problems: Kepler's laws, scattering, and orbit theory, Small oscillations and normal modes

**UNIT II: Electromagnetic Theory:** Solutions of electrostatic and magnetostatic problems including boundary value problems; method of images; separation of variables; dielectrics and

conductors; magnetic materials; multipole expansion; Electromagnetic induction, Maxwell's equations; scalar and vector potentials; Coulomb and Lorentz gauges; electromagnetic waves in free space, non-conducting and conducting media; reflection and transmission at normal and oblique incidences; polarization of electromagnetic waves; Poynting vector, Poynting theorem, energy and momentum of electromagnetic waves; radiation from a moving charge.

**UNIT III: Mathematical Physics:** Linear algebra: Vectors, matrices, eigenvalues, and eigenvectors, Complex analysis: Complex numbers, analytic functions, contour integration, Differential equations: Ordinary and partial differential equations, boundary value problems, Fourier analysis and Laplace transforms, Special functions: Bessel, Legendre, Hermite, and Laguerre functions.

**UNIT IV: Quantum Mechanics:** Postulates of quantum mechanics; uncertainty principle; Schrodinger equation; Dirac Bra-Ket notation, linear vectors and operators in Hilbert space; one dimensional potentials: step potential, finite rectangular well, tunneling from a potential barrier, particle in a box, harmonic oscillator; two and three dimensional systems: concept of degeneracy; hydrogen atom; angular momentum and spin; addition of angular momenta; variational method and WKB approximation, time independent perturbation theory.

**UNIT V: Statistical Mechanics and Thermodynamics:** Laws of thermodynamics, entropy, and free energies, Statistical ensembles: Microcanonical, canonical, and grand canonical ensembles, Quantum statistics: Bose-Einstein and Fermi-Dirac distributions, Phase transitions: Classification, critical phenomena, and mean-field theories, Blackbody radiation, Debye theory of solids, and Bose-Einstein condensation

## Syllabus | Chemistry

**UNIT - I Organic Chemistry** IUPAC nomenclature of organic compounds, Principles of stereochemistry, conformational analysis, isomerism and chirality, Reactive intermediates and organic reaction mechanisms, Concepts of aromaticity, Pericyclic reactions, Named reactions, Transformations and rearrangements, Principles and applications of organic photochemistry, Free radical reactions, Reactions involving nucleophotic carbon intermediates, Oxidation and reduction of functional groups, Common reagents (organic, inorganic and organometallic) in organic synthesis, Chemistry of natural products such as steroids, alkaloids, terpenes, peptides, carbohydrates, nucleic acids and lipids, Selective organic transformations – chemoselectivity, regioselectivity, stereoselectivity, enantioselectivity, Protecting groups, Chemistry of aromatic and aliphatic heterocyclic compounds.

**UNIT - II Inorganic Chemistry Atomic structure, Chemical periodicity;** Structure and bonding in homo- and heteronuclear molecules, including shapes of molecules; Concepts of acids and bases; Chemistry of the main group elements and their compounds - Allotropy, synthesis, bonding and structure; Chemistry of transition elements and coordination compounds – bonding theories, spectral and magnetic properties, reaction mechanisms; Inner transition elements – spectral and magnetic properties, analytical applications; Organometallic compounds - synthesis, bonding,

structure and reactivity, Organometallics in homogenous catalysis, Cages and metal clusters; Bioinorganic chemistry – photosystems, porphyrines, metalloenzymes, enzyme catalysis, oxygen transport, electron- transfer reactions, nitrogen fixation. Solid state chemistry - defects in solids, preparation of solids, properties - conductance, thermal, mechanical, thermoelectric, magnetic - Applications. Nuclear chemistry.

**UNIT - III Physical Chemistry** Basic principles and applications of quantum mechanics – hydrogen atom, angular momentum, Variational and perturbational methods, Basics of atomic structure, electronic configuration, shapes of orbitals, hydrogen atom spectra, Theoretical treatment of atomic structures and chemical bonding, Chemical applications of group theory, Chemical thermodynamics, Phase equilibria, Statistical thermodynamics, Chemical equilibria, Electrochemistry – Nernst equation, electrode kinetics, electrical double layer, Debye-Hückel theory, Chemical kinetics – empirical rate laws, Arrhenius equation, theories of reaction rates, determination of reaction mechanisms, experimental techniques for fast reactions, 85 Solids - structural classification of binary and ternary compounds, diffraction techniques, bonding, thermal, electrical and magnetic properties Colloids and surface phenomena, Phase rule.

**UNIT - IV Analytical Chemistry** Sampling and error analysis, wet chemical methods of analysis electroanalytical techniques, thermal methods of analysis, separation techniques, basic principles and applications of spectroscopy – rotational, vibrational, electronic, Raman, ESR, NMR, mass spectrometry and mossbauer spectroscopy.

**UNIT - V Applied Chemistry** Polymer chemistry, Molecular weights and their determinations, Kinetics of chain polymerization, catalysis and its industrial application, corrosion and its control, coatings, fuel/solar cells, pollution and its control, nanochemistry and technology, environmental chemistry, green chemistry.

## Syllabus | Computer Science and Engineering

**UNIT-I. Mathematics - Linear Algebra:** Matrices, determinants, eigenvalues, eigenvectors, vector spaces, and linear transformations. Probability and Statistics: Basics of probability theory, random variables, distributions, statistical inference. Calculus: Limits, continuity, differentiation. Discrete Mathematics: Set theory, graph theory, logic, combinatorics, recurrence relations, and Boolean algebra.

**UNIT-II. Algorithms and Data Structures** - Data Structures: Arrays, linked lists, stacks, queues, trees, graphs, heaps, and hash tables. Algorithms: Sorting and searching algorithms, dynamic programming, greedy algorithms, divide and conquer, backtracking, graph algorithms (shortest paths, MST), and Time and Space Complexity of algorithms.

**UNIT-III.Operating Systems** - Process Management: Process synchronization, scheduling algorithms, deadlock. Memory Management: Virtual memory, paging, segmentation. Disk scheduling. Concurrency: Threads, inter-process communication, semaphores, monitors.

**UNIT-IV Computer Networks** - Network Protocols and OSI Model: Layers (physical, data link, network, transport, session, presentation, application), TCP/IP. Routing and Switching: IP addressing, subnetting, routing algorithms.

**UNIT-V Database Management Systems (DBMS) - Data Models:** Relational, hierarchical, network models. SQL: Queries, joins, subqueries, triggers, views. Normalization: Normal forms (1NF to 5NF), functional dependencies. Transaction Management: ACID properties, concurrency control, recovery techniques.

**UNIT-VI Software Engineering - Software Development Life Cycle (SDLC):** Waterfall, Agile, and other methodologies. Software Design: UML diagrams, design patterns, modularization, and cohesion. Testing: Unit testing, integration testing, system testing, black-box and white-box testing.

**UNIT-VII Artificial Intelligence and Machine Learning - Machine Learning Fundamentals:** Supervised, unsupervised, and reinforcement learning. Algorithms: Decision trees, neural networks, support vector machines, k-means clustering. AI Concepts: Knowledge representation, search algorithms, logic, planning.

**UNIT-VIII Computer Architecture - Digital Logic:** Boolean functions, logic gates, combinational and sequential circuits. Processor Design: Instruction set architecture, microprocessors, RISC vs. CISC. Memory Hierarchy: Cache, main memory, virtual memory. Parallelism: Instruction-level parallelism, pipelining, and multiprocessing basics.

**UNIT-IX Programming Languages** - Basics of C, Python, Java languages.

## Syllabus | Electronics and Communication Engineering

**UNIT - I** Semiconductor Devices, Electronic Circuits Biasing , BJTs and MOSFETs, Amplifiers, Low & High frequency analysis, IC MOSFET, Oscillators; Analog ICs - A-D & D-A Convertors, Applications of Analog ICs; Digital Electronics - Combinatorial circuits and Sequential circuits UNIT - II Communication Line coding, amplitude modulation and demodulation, spectra of AM and FM, PCM, DPCM, digital modulation schemes: amplitude, phase and frequency shift keying (ASK, PSK, FSK), QAM, MAP and ML decoding, TDMA, FDMA and CDMA

**UNIT - III** Basics Of Signals And Systems , Digital Signal Processing Fourier series and Fourier transform, DFT, FFT, Z-transform, digital filter design techniques; Digital image Processing- Spatial and Frequency domain techniques, image enhancement, Segmentation, Restoration, Compression techniques, Laplace transforms, Zeros, Poles, Stability, Gain Margin, Phase Margin

**UNIT - IV** Microprocessor and Micro Controller 8085 & 8086 Microprocessor architectures - Memory Interfacing and I/O interfacing; Embedded Systems – 8051 & PIC Microcontroller- Special Function Registers, Interfacing, PIC Development Tools And Programming; VLSI - FPGA architectures.

**UNIT - V** Low Power VLSI, Power Dissipation, Power Optimization, Low Power CMOS Circuits, Power Estimation, Synthesis and Software Design For Low Power

## Syllabus | Education

**Unit I. Philosophical And Sociological Foundations of Education**

Meaning and Function of Educational Philosophy, Relationship of Education and Philosophy; Western schools of Philosophy: - Idealism, Realism, Naturalism, Pragmatism, and Existentialism with special reference to the concepts of reality, knowledge and values, their educational implications for aims, contents and methods of education. Contributions of Educational thinkers – Plato, Aristotle, Rousseau, John Dewey, Froebel, Montessori Indian Schools of Philosophy – Sankhya, Yoga , Nyaya, Vaisheshika, Purva Mimamsa, and Uttara Mimamsa (Vedanta),and Buddhism with special reference to the concepts of reality, knowledge and values and their educational implications.. Contributions of Indian Thinkers:- Gandhiji , Tagore Vivekananda, Aurobindo; Concept and Nature of Educational Sociology and Sociology of Education, Relationship of Sociology and Education. Education and Social Change: Meaning, Nature and Factors determining Social change; Constraints of social change in India: Caste, Ethnicity, class, language, religion and regionalism; Education and social stratification Education and Social Mobility; Education for Democracy, Socialism, National Integration and International Understanding: Education for equal i educational opportunities

**Unit II: Advanced Educational Psychology**

Relationship of Education and Psychology. Scope of Educational Psychology; Methods of Educational Psychology; Concept of Growth and Development, factors affecting growth and development, Individual differences and implications, Exceptional children – Gifted, Slow, Underachievers, CWSN; Personality and related concepts - Types and Trait Theories; Assessment of Personality - Subjective and Projective Methods ; Maslow's hierarchy of needs; Creativity and related concepts, Intelligence and concepts, Theories:- Two Factor Theory (Spearman); Multi Factor Theory, Group Factor Theory, Guilford Model of Intellect, Multiple intelligences, Emotional Intelligence; Theories of Learning - Pavlov's Classical Conditioning, Thorndike's Associationism, Skinner's Operant Conditioning, Insight theory, Lewin's Field Theory, Gagne's Hierarchy of Learning, Constructivist theories of Piaget, Bruner and Vygotsky; Psychoanalytic theory, Concepts of Motivation, Achievement Motivation

**Unit III: Research Methodology and Statistics In Education**

Nature and Scope of Educational Research; Scientific inquiry, scientific method, nature and sources of knowledge; Types of Research - Fundamental, Applied and Action Research; Process and Steps of Educational Research; Review of Related Literature; Hypothesis -types, and related concepts; Sampling, types, and related concepts, characteristics of a good sample; Variables – types and related concepts, Characteristics of a good research tool; Descriptive Statistics - Nature of educational data, Scales of measurement; Measures of Central Tendency: Mean, Median and Mode; Measures of Dispersion: Range, Quartile Deviation, Mean Deviation, Standard

Deviation; Measures of Relative Position: Percentiles and Percentile Ranks; Inferential statistics- Null Hypothesis, Type I and Type II errors, one and two tailed tests ; use of t tests, ANOVA, Chi square, ANCOVA, regression analysis; Qualitative research and Mixed Method analysis; essentials of a Research report,

**Unit IV Contemporary Discussions in Education**

NEP 2020- School Education, NEP -Higher Education; Multidisciplinarity, NEP and Research, Blended Learning, Flipped Learning and Hybrid Learning, AI Integrated classrooms; AI Integrated Techno-Pedagogical content Knowledge analysis, Competency enhancement- Hard skills, Soft skills and Life Skills; Values, Peace and Human right education; Value Crisis and factors of value crisis- Role of Family, Religion, Educational Institutions, Mass Media (print and Electronic), Social Media in value and peace education; Peace: Concept of peace and peace education, Aims and objectives of peace Education; Status of peace education in the curriculum , and importance of peace education -Sources of value education: Religious literature-Vedas, Bhagavad-Gita etc; Happiness education; Human rights and its relevance; Revamping Pre-Service and in-service Teacher Education; Concept of GA, PO, LO frameworks.

## Syllabus | Psychology

**Fundamentals of Psychology:** Attention, Perception, Motivation, Learning, Memory and Forgetting, Emotion, Personality, Thinking, Intelligence, Creativity Schools of Psychology: Beginning of Experimental psychology, Structuralism, Functionalism, Behaviourism, Psychodynamic: Freudian and Neo Freudian, Gestalt Psychology, Humanistic Psychology, Existential Psychology, Indian Perspectives: Buddhism, Hinduism, Sufism and Integral Yoga.

**Biological basis of behaviour:** Nervous system, Central Nervous system, Peripheral Nervous System, Visual system, Auditory system, Biological basis of emotion, and motivation.

**Psychological testing:** Psychometry, Historical Sketch, Types of Tests, Test Construction, Test standardization Areas of testing, Attitude scales, and its applications in various settings: Education, Industry, Clinical Settings.

**Social Psychology:** Nature, History, Traditional theoretical perspectives, Cognitive Dissonance, Group, Social Cognition, Social Perception, Prosocial Behaviour, Social influence, Aggression

**Psychopathology and Psychotherapy:** Approaches to Psychopathology, Diagnostic and Statistical Manual of Mental Disorders (DSM) and International Classification of Diseases (ICD), Mental Status Examination, Classification Psychotherapy and Counseling: Approaches, Types of psychotherapies, Individual counseling, Group counseling, process, skills and techniques

**Organizational Behaviour:** Nature and Scope, Challenges and Opportunities for Organizational Behaviour, Work Motivation, Leadership, Communication.

**Health Psychology:** Introduction, historical background, Stress and coping, Pain and Illness, Health compromising and enhancing behaviors

## Syllabus | Commerce and Management

**General Management:** Principles and functions of management, organizational structure, responsibility and authority, motivation and leadership, corporate governance, and business ethics; planning, decision-making, organization, motivation, leadership, organizational structure, and organizational culture.

**Human Resource Management:** Performance appraisal, including 360-degree performance appraisal, collective bargaining, and workers' participation in management; HR planning, recruitment, selection, job description, job analysis, job specification, and training & development.

**Marketing Management:** Marketing mix, product decisions, pricing decisions, promotion decisions, distribution decisions, market segmentation, targeting & positioning, product life cycle, and consumer behavior.

**General Accounting and Auditing:** Basic accounting standards and principles, journal and ledger entries, final accounts (Trading, P&L, and Balance Sheet), partnership accounts, ratio analysis, cash flow analysis; financial statements analysis, Indian Accounting Standards, IFRS, auditing, and recent trends in auditing.

**Cost & Management Accounting:** Concepts of different costs, elements of costs, break-even-point analysis, marginal costing, standard costing, and budgetary control.

**Financial Management:** Basic concepts of financial management, time value of money, capital structure, capital budgeting, cost of capital, working capital management, and risk and return analysis.

**Banking and International Business:** National income, inflation, business cycle, foreign trade, business environment and policy framework in India, international business, balance of payments, types of banks and their functions, role of RBI, SEBI, NABARD, and rural banking; e-banking, financial institutions, financial regulators, and banking sector reforms.

**Legal Aspects of Business:** Indian Contract Act, 1872; special contracts; Sale of Goods Act, 1930; Negotiable Instruments Act, 1881; Companies Act, 2013; Limited Liability Partnership; RTI Act, 2005; intellectual property rights (IPRs); Goods and Services Tax (GST); income tax, and corporate tax planning.

# Linguistics and Literary Studies Discipline

## PART -I

### RESEARCH METHODOLOGY

Scope and objectives of research in Sanskrit – Definition of research – Methods Traditional – Scientific – Historical – Philological – Difference among research papers – dissertation and thesis - Tantrayukti

General qualifications for research - Anubandhacatuṣṭaya - Proficiency in the field - Heuristic motivation - Reflective ability - Special qualifications - Capacity for high degrees of generalisation - Language of source - Language of reporting

Basic types - Thinker or Text based topics - concept based - comparative - meta-philosophical - inter-disciplinary - multi-disciplinary - guiding principles in choosing a topic - scope for original contribution - literature review - developing a research question - formulating a topic - preliminary synopsis - abstract

Meaning of critical edition - materials required - fixing the definitive reading - collation - equipment for a critical editor - Textual criticism - Literary criticism - different schools of alaṅkāra

Form of a thesis - title page - preface - acknowledgments - table of contents - abbreviations - introduction - chapters - conclusion - appendices - bibliography - notes - illustrations - pagination - quotations - transliteration - common scholarly abbreviations - style - plagiarism.

## Syllabus for Core Subject – Ph.D. Admission Entrance Examination

(Choose one subject of core area)

# PART -II

## Syllabus | Sanskrit

### Unit - I Vedic-Literature & Sanskrit Literature, Poetics and Prosody

**(a) General Introduction of Vedic Literature:** · Main theories regarding the Vedās: Maxmüller; A.Weber; Jacobi; Balgangadhar Tilak; M.Winternitz; Indian traditional views. · Saṁhitā Literature · Brāhamaṇa Literature · Āraṇyaka Literature · Śikṣā; Kalpa; Vyākaraṇa; Nirukta; Chandas; Jyotiṣa

**(b) General Introduction of the following:** Bhāsa, Aśvaghośa, kālidāsa, Śūdraka, Viśākhadatta, Bhāravi, Māgha, Harṣa, Bāṇabhaṭṭa, Daṇḍin, Bhavabhūti, Bhaṭṭanārāyaṇa, Bhilhaṇa, Shrīharṣa, · Schools of Sanskrit Poetics – Rasa, Alaṅkāra, Rīti, Dhvani, Vakrokti, Aucitya, · Chandas – Āryā, Anuṣṭup, Indravajrā, Upendravajrā, Vasantatilakā, Upajāti, Vaṁśastha, Drutavilambita, Śālinī, Mālinī, Śikharṇī, Mandākrāntā, Hariṇī, Śārdūlavikrīḍita, Sragdharā

### Unit - II Darśana:

a) General Introduction of major schools of Darśana with special reference to the following: Sānkhyakārikā (First 10 Kārikā-s), Yogasūtra (Samādhi pāda), Vedāntasāra, Arthasaṁgraha (Upto Vidhinirūpaṇam)

### Unit - III Grammar and Linguistics:

**a) General Introduction to Vyākaraṇa with special reference to the following:** · Pāṇini, Kātyāyana, Patañjali, Pāṇinīya Śikṣā. · Siddhāntakaumudī (saṃjñā-paribhāṣā, sandhi, kāraka, samāsa), · Mahābhāṣyam (Paśpaśāhnikam), · Paramalaghumañjūṣā (tātparyanirūpaṇam).

**b) Linguistics:** · Definition of Language, Geneological and Morphological classification of Languages, · Speech Mechanism and classification of sounds: Stops, Fricatives, Semi-Vowels and vowels (with special reference to Sanskrit sounds) · Phonetic Laws (Grimm, Grassman, Verner) · Directions of semantic change and reasons of change. · Definition of Vākya and its types. · General introduction of Indo-European family of Languages; · Difference between Vedic Sanskrit and Classical Sanskrit; · Difference between Bhāṣā and Vāk; · Difference between language and dialect.

## Syllabus | Hindi

यूनटि 1: हदिी भाषा और उसका वकिास, हनि्दी की ऐतहिासकि पृष्ठभूमि, हनि्दी क भौगोलकि वसि्तार, हनि्दी के ववििधि रूप हनि्दी, उर्दू, दक्खनिी, हनि्दुस्तानी हनि्दी ध्वनयिों के वर्गीकरण का आधार

हनि्दी – वाक्य रचना, हनि्दी की संवैधानकि स्थति, आधुनकि भारतीय आर्य भाषाएं और उनका वर्गीकरण, हनि्दी की उपभाषाएं

हनि्दी का भाषकि स्वरूप, हनि्दी भाषा प्रयोग के ववििधि रूप,कम्प्यूटर और हनि्दी, देवानागरी लपि,

यूनटि 2: हदिी साहत्यि का इतहिास, हनि्दी साहत्येतहिास दर्शन, ,हनि्दी साहत्यि का काल वभिाजन और नामकरण,भक्तकिाल

रीतकिाल सामाजकि-सांस्कृतकि पृष्टभूमि, रीतकिाल की प्रमुख प्रवृत्तयिां,आधुनकि काल,समकालीन कवति (वर्ष 2000 तक)

हनि्दी उपन्यास,हनि्दी नाटक और रंगमंच,आलोचना का उद्भव और वकिास,हनि्दी का प्रवासी साहत्यि,हनि्दी साहत्यि के इतहिास लेखन की पद्धतयिां,आदकिालीन हनि्दी का साहत्यि,भक्तकिाव्य के प्रमुख सम्प्रदाय,रीतकिाल के प्रमुख कवि और उनका काव्य,

हनि्दी गद्य का उद्भव और वकिास,समकालीन साहत्यिकि पत्रकारति,हनि्दी कहानी का उद्भव और वकिास,हनि्दी नबिन्ध के उद्भव और वकिास,हनि्दी की अन्य गद्य वधिाएँ,अवधारणा एवं प्रमुख साहत्यिकार

यूनटि 3: साहत्यिशास्त्र ,काव्य के लक्षण, काव्य हेतु और काव्य प्रयोजन,प्लेटो के काव्य सद्धिान्त,वर्ड्सवर्थ का काव्यभाषा सद्धिान्त

टी.एस. इलएिट: नर्वैयक्तकिता का सद्धिान्त, परम्परा की अवधारणा रूसी रूपवाद, नयी समीक्षा मथिक,प्रमुख संप्रदाय और सद्धिान्त रस, अलंकार, रीति, ध्वनि, वक्रोक्ति और औचत्यि, रस,नष्पित्ति,अरस्तू : अनुकरण सद्धिान्त, त्रासदी ववेचन, वरिचन सद्धिान्त, कॉलरजि: कल्पना और फैंटेसी, आई.ए. रचिर्ड्स मूल्य सद्धिान्त, संप्रेषण सद्धिान्त तथा काव्य-भाषा सद्धिान्त, फंतासी, कल्पना, प्रतीक, बम्ि्ब

यूनटि 4: वैचारकि पृष्ठभूमि,भारतीय नवजागरण और स्वाधीनता आन्दोलन की वैचारकि पृष्ठभूमि,फोर्ट वलियिम कॉलेज भारतेन्दु और हनि्दी नवजागरण

मार्क्सवाद, मनोवधिेषणवाद, अस्तत्विवाद, उत्तर आधुनकितावाद,हनि्दी नवजागरण खड़ी बोली आन्दोलन,गांधीवादी दर्शन, अम्बेडकर दर्शन, लोहयिा दर्शन,अस्मतिामूलक वमिर्श (दलति, स्त्री आदवािसी एवं अल्पसंख्यक)

यूनटि 5: हदिी कवति,पृथ्वीराज रासो रेवा तट,वद्यिापति की पदावली,कबीर,घनानन्द कवत्ति,तुलसीदास रामचरतिमानस, उत्तर काण्ड, प्रयिप्रवास, भारत भारती, साकेत (नवम् सर्ग), आंसू, कामायनी (लज्जा, इड़ा),परविर्तन, प्रथम रश्मि, उर्वशी (तृतीय अंक), रश्मिरथी, कालदिास, बादल को घरिते देखा,है, अकाल और उसके बाद, खुरदरे पैर,शासन की बंदूक, कलगी बाजरे की, यह दीप अकेला, हरी घास पर क्षण भर असाध्य,वीणा कतिनी

नावों में कतिनी बार,अमीर खुसरो खुसरों की पहेलयिाँ और मुकरयिाँ,जायसी ग्रंथावली (नागमती वयिोग खण्ड),बहिारी सतसई,सूरदास भ्रमरगीत सार,मीरा, वशि्वनाथ त्रपिाठी,जूही की कली, जागो फरि एक बार, सरोजस्मृति, राम की शक्तपिूजा, कुरमुत्ता, बाँधो न,नाव इस ठाँव बंधु,बीन भी हूँ मैं तुम्हारी रागनिी भी हूँ, मैं नीर भरी दुख की बदली, फरि वकिल है प्राण,मेरे, यह मन्दरि का दीप इसे नीरव जलने दो, द्रुत झरो जगत के जीर्ण पत्र,गीत फरोश, सतपुड़ा के जगल, भूल गलती ब्रह्मराक्षस अंधेरे में, मोचीराम, अकाल दर्शन,रोटी और संसद

यूनटि 6: हदिी उपन्यास:देवरानी जेठानी की कहानी,शेखर एक जीवनी (भाग – 1),मैला आंचल, झूठा सच, मानस का हंस

परीक्षा गुरु, गोदान,बाणभट्ट की आत्मकथा,तमस, राग दरबारी, जदिगीनामा,

यूनटि 7: हदिी कहानी:चन्द्रदेव से मेरी बातें. दुलाईवाली,राही, ईदगाह, दुनयिा का अनमोल रतन,आकाशदीप, अपना-अपना भाग्य

गैंग्रीन, कोसी का घटवार,चीफ की दावत, इंस्पेक्टर मातादीन चाँद पर,एक टोकरी भर मट्टिी, उसने कहा था,कानों में कंगना, परदि

तीसरी कसम, लाल पान की बेगम,अमृतसर आ गया है, सक्किा बदल गया,पति, राजा नरिबंसयिा.

यूनटि 8: हदिी नाटक:अंधेर नगरी, भारत दुर्दशा,अंधायुग, सदिूर की होली, एक और द्रोणाचार्य,आगरा बाजार, बकरी,चन्द्रगुप्त, स्कंदगुप्त, ध्रुवस्वामनिी,आधे-अधूरे, आषाढ़ का एक दनि,अंजो दीदी, महाभोज,

यूनटि 9: हदिी नबिंध:दलि्ली दरबार दर्पण, भारतवर्षोन्नति कैसे हो सकती,मेरे राम का मुकुट भीग रहा है, संस्कृति और सौंदर्य

मजदूरी और प्रेम, उत्तराफाल्गुनी के आस-पास ,शविशंभु के चट्टिे, कवति क्या है,नाखून क्यों बढ़ते हैं,उठ जाग मुसाफरि

यूनटि 10: आत्मकथा, जीवनी तथा अन्य गद्य वधिाएं :माटी की मूरतें, ठकुरी बाबा, मेरी तब्बित यात्रा,मुर्दहयिा, प्रेमचंद घर में, आवारा मसीहा,एक कहानी यह भी, क्या भूलूँ क्या याद करूं,आपहुदरी, भोलाराम का जीव,संस्कृति के चार अध्याय, एक लेखक की डायरी

जामुन का पेड़, अरे यायावर याद रहेगा.

यूनटि 11- • प्रयोजनमूलक हनि्दी:प्रयोजनमूलक हनि्दी,राजभाषा हदिी,हदिी पत्रकारति

## Syllabus | English

**UNIT I: Literary Criticism:** Historical Criticism, Marxist Criticism, Feminist Criticism, Psychoanalytic Criticism, Postcolonial Criticism, Structuralism/Post-Structuralism, Deconstruction, New Criticism, Ecocriticism, Queer Theory.

**UNIT II: Cultural Studies:** Antonio Gramsci & Hegemony, Raymond Williams & Cultural Materialism, Michel Foucault & Biopolitics, Stuart Hall & Representation, Edward Said & Orientalism, Judith Butler & Gender Performativity, Roland Barthes & Semiotics, Louis Althusser & State Apparatuses, Homi K. Bhabha & Hybridity/Third Space, Gayatri Chakravorty Spivak & Subaltern Studies, Jean Baudrillard & Simulacra and Simulation, Frantz Fanon & Decolonisation

**UNIT III: Indian Writing in English:** Colonialism and Postcolonialism, Partition Literature, Diaspora and Migration, Gender and Feminism, Environmental and Ecological Concerns, Major writers in Indian English Literature.

**UNIT IV: History and Ages of English Literature:** Beowulf, Geoffrey Chaucer & The Canterbury Tales, Elizabethan Age writers & works, John Dryden, Christopher Marlowe, William Shakespeare, Alexander Pope & The Rape of the Lock, Jonathan Swift & Gulliver's Travels, Victorian Age, Romantic Age and Poets, Charles Dickens, George Eliot, Oscar Wilde, James Joyce, T. S. Eliot, Virginia Woolf, Franz Kafka, Postmodern Period, Toni Morrison,

**UNIT V: Drama:** Mystery Plays, Morality Plays, Miracle Plays, Shakespearean Drama, Comedy of Manners, Absurd Theatre, William Congreve, John Webster, Henrik Ibsen, George Bernard Shaw, Franz Kafka, Samuel Beckett, Harold Pinter, Anton Chekov, Oscar Wilde.

**UNIT VI: Poetry:** Sonnets, Ballad, Pastoral Poetry, Cavalier Poets, Surrealism, John Milton, Samuel Taylor Coleridge, John Keats, W. B. Yeats, Robert Browning, Alfred Lord Tennyson, Teg Hughes, Sylvia Plath, Dylan Thomas, W. H. Auden, Jonathan Swift, Robert Frost.

**UNIT VII: Fiction:** Realism, Stream of Consciousness, Leo Tolstoy, George Orwell, Agatha Christie, Arthur Conan Doyle, Margret Atwood, Virginia Woolf, Jane Austen, Chinua Achebe, Salman Rushdie, Toni Morrison, Franz Kafka, Zadie Smith.

**UNIT VIII: Linguistics:** Phonetics, Language Teaching and Learning, Phonology, Morphology, Syntax, Semantics, Sociolinguistics.