

INFORMATION BROCHURE
for
Entrance Test for Research Degree Programmes
Doctor of Philosophy (Ph.D.)
and
Master of Philosophy (M.Phil.)
July 2018 SESSION



RESEARCH UNIT
Indira Gandhi National Open University MaidanGarhi,
New Delhi-110 068

Candidates are required to apply on-line only. The Online Link for PHD and MPhil Entrance Portal is as under :

<https://onlineadmission.ignou.ac.in/entrancersunit/>

The online portal for submission of applications will be operational from 23.01.2018.

1. Applications are invited for admission to MPhil and PhD programmes in select disciplines for the July session. The list of disciplines and number of seats available are given in Appendix II.
- b) The programmes are offered under regular mode in strict compliance of the UGC (Minimum Standards and Procedure for award of M Phil/ PhD Degrees) Regulations, 2016 and amendments thereto from time to time. Selected candidates will be governed by IGNOU Ordinance, IGNOU Regulation and IGNOU Guidelines for M Phil/ PhD Programmes (available at IGNOU website).
- c) Admission to the M Phil/ PhD programmes is strictly on merit, based on performance in Entrance Test and Interview.
- d) IGNOU offers M Phil/ PhD programmes under two categories: part time and full time. Both categories of students will be required to attend classes if course work is allotted to them.
- e) The M Phil/ PhD programmes involve coursework during the first six months of admission, which will be conducted in IGNOU Campus at New Delhi only. A student has to attend the coursework on a regular basis. At least 80 per cent attendance in classes is compulsory.
- f) As of now IGNOU does not have hostel facilities for students. Students have to make their own arrangements for stay.

2. ELIGIBILITY CRITERIA FOR M.PHIL./PH.D.

The eligibility criteria for admission to M Phil ad PhD programmes are as follows:

For M.Phil.:

- a) Master's Degree from a University recognized by UGC in the relevant discipline with at least 55% marks [50% marks in the case of SC,ST and OBC(Non-creamy Layer)/ Differently-Abled and other categories of candidates as per the decision of UGC from time to time, or for those who had obtained their Master's Degree prior to 19th September,1991].
- b) **Applicants are required to see Appendix II for further details on eligibility criteria for specific programmes.**

For Ph.D.:

- (a) Master's Degree from a University recognized by UGC in the relevant discipline with at least 55% marks [50%marks in the case of SC,ST and OBC(Non-creamy Layer)/Differently-Abled and other categories of candidates as per the decision of UGC from time to time, or for those who had obtained their Master's Degree prior to 19th September,1991].
- (b) Candidates holding M.Phil. degree (along with course work and dissertation both) or those candidates who have cleared NET (conducted by UGC/CSIR/ICAR) or any other equivalent examination will be exempted from appearing in the Entrance Test.**
- (c) Those who have not cleared NET/any other equivalent examination or not holding M.Phil. Degree will be required to appear in the Entrance Test.**
- (d) See Appendix II for further details.

3. SELECTION PROCEDURE:

Stage 1: Entrance Test:

- a) The Entrance Test is qualifying in nature .
- b) The Entrance Test will be conducted by the University on **4th March 2018 (Sunday)** at National Level in select examination centres across the country (See Appendix I for the list)
- c) The list of candidates who will be required to appear for the Entrance Test will be displayed on IGNOU website, www.ignou.ac.in.

- d) Hall Tickets enabling the candidates to take the Entrance Test will also be displayed on IGNOU website. Candidates are required to download and print the same to appear in the Entrance Test.
- e) Candidates are required to bring with them an original identity proof having photograph, such as Aadhar Card, Voter ID Card, Driving License, Passport and ID Card issued by Govt. Agencies.
- f) Those who secure at least 50% marks in the entrance test (45% marks in case of SC/ST/PH) will be shortlisted for the interview in order of merit subject to the maximum limit of five times of the available seats.

Stage 2: Interview/ Presentation

- a) Short-listed Candidates in the Entrance Test will be called for interview/presentation of Synopsis before the Discipline specific Doctoral Research Committee.
- b) Those candidates exempted from appearing in the Entrance Test will also be called for interview/presentation of Synopsis before the Discipline specific Doctoral Research Committee.
- c) Offer letters for admission will be sent to the Selected Candidates only.

Important Dates:

16th February 2018 (Friday) - Last date for submission of online Application

4th March 2018 (Sunday)- Entrance Test

6th April 2018 (Friday) Tentative - Declaration of Result

Notes:

- 1. Candidates are required to apply on-line only. The Online Link for PHD and MPhil Entrance Portal is as under :**
<https://onlineadmission.ignou.ac.in/entrancersunit/>
- 2. No offline/hardcopy of the form will be accepted. Candidates are required to go through Appendix II and III of the information brochure for eligibility criteria and syllabus for the entrance test.**
- 3. Application fee of Rs. 1,000/- is non-refundable under any circumstances.**
- 4. Reservation of seats as per Government of India rules will apply.**

5. For any discipline specific query at any stage, candidates are advised to contact the concerned Programme Coordinator (see AppendixII)
6. For Discipline specific syllabus for Entrance Test please refer to Appendix III
7. Being called for interview does not entitle a candidate to stake claim for admission. The Doctoral Research Committee may not recommend a candidate if the discipline does not have the specialization in which he/she wants to carry out research.
8. The University reserves the right not to fill up some or all the seats vacant in a Research Degree programme in case suitable candidates are not found at the level of entrance Test/ Interview

For any general query, please e-mail to rdpadmission@ignou.ac.in/bijayala xmi@ignou.ac.in or contact on the following numbers: 011-29571984/1985/1988/ 1998.

Appendix-I

List of Examination Centres for Entrance Test on 4th March 2018

Sl. No.	City	City Code
1.	Ahmedabad	01
2.	Bengaluru	02
3.	Bhopal	03
4.	Chandigarh	04
5.	Chennai	05
6.	Delhi	06
7.	Guwahati	07
8.	Hyderabad	08

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9.	Kolkata	09
10.	Lucknow	10
11.	Mumbai	11
12.	Patna	12
13.	Trivandrum	13

Appendix- II

Discipline-wise Vacancy of Seats/ Specific eligibility criteria and Programme Coordinators

Sl No	Discipline	Programme	Seats available	Name of Programme Coordinator	Eligibility criteria	Contact	Remarks
1.	Geology (SOS)	Ph D	Gen-05 SC-01 ST-01 OBC-02 (Total - 09)	Dr Meenal Mishra	Postgraduation in Geology or Geological Science or Applied Geology or Geo-Exploration or Mineral Exploration or Engineering Geology or Marine Geology or Earth Science and Resource Management or Petroleum Geosciences or Petroleum Exploration or	omkarverma@ignou.ac.in 011-29571675	

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					Geochemistry or Geophysics or Hydrogeology or Geomatics or Geoinformatics or Remote Sensing and GIS from any recognized university		
2.	Statistics (SOS)	Ph D	Gen-03 SC-01 ST-01 OBC-01 (Total- 6)	Dr. Neha Garg	M. Phil. in Statistics or qualified UGC-CSIR NET/SLET in Statistics with Post Graduation in Statistics/Applied Statistics. or Post Graduation in Statistics/Applied Statistics with minimum 55% from any recognized university.	nehagarg@ignou.ac.in 011-29572806	
3.	Geography (SOS)	PH D M Phil	Gen-03 SC-02 ST-01	Dr Vijay Kumar	M.A./M.Sc. in	vijabaraik@ignou	

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			OBC-05 (Total -11) Gen-05 SC-01 ST-01 OBC-03 (Total -10)	Baraik	Geography, Earth Systems Science and Relevant Discipline of Geospatial Technology”	.ac.in 011-29571673	
4.	Gender and Development Studies (SOGDS)	Ph D	Gen-03 SC-01 ST-00 OBC-01 (Total -5)		Master’s degree in Gender Studies or Gender & Development Studies with 55% OR Master’s degree in other streams with one or two courses in the area of Gender Studies or Gender & Development Studies and/or with demonstrable evidence of teaching and / or research and publications in the area of Gender Studies or	savitasingh@ignou.ac.in 011- 29571613	

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					Gender & Development Studies.		
5.	Women's studies	Ph D	Gen-03 SC-01 ST-00 OBC-01 (Total -5)	Prof. Nilima Srivastav	Master's degree in Women's Studies or Gender Studies with 55% OR Master's degree in other streams with one or two courses in the area of Women's/Gender Studies and/or with demonstrable evidence of teaching and / or research and publications in the area of Women's /Gender Studies.	nilimasrivastav@ignou.ac.in 011-29571612	
6.	Bio-chemistry	Ph D	Gen-Nil SC-1 ST-1 OBC-1 (Total-3)		UGC-NET(including JRF)/UGC/C SIR-NET (including	parvesh@ignou.ac.in 011-29572765	There will be no Entrance Test for

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					JRF)/SLET/ GATE/ M Phil or should be a teacher fellowship holder of UGC.		Bio- Chemist ry for July 2018 session
7.	Physics (SOS) Area of specialisa tion (Physics Educatio n & Nuclear Reactor Physics)	Ph D	Gen-01 SC- 01 ST-00 OBC-00 (Total -2)	Dr Subhalaks hmilamba	UGC- NET(includ ing JRF)/UGC/ CSIR-NET (including JRF)/SLET /GATE or should be a teacher fellowship holder of UGC	slamba@ignou.ac. in 011- 29572814	There will be no Entrance Test for Physics for July 2018 session
8.	Chemistr y (SOS)	PhD MPhil	Gen -04 SC-01 ST-01 OBC-02 (Total -08) Gen -02 SC-01 ST-01 OBC-1 (Total -05)	Prof. Javed Farooqi	Master's Degree and/or M. Phil. Degree in Chemistry Master's Degree in Chemistry	javedfarooq@rediff mail.com 011-29572822	
9.	Psycholo gy (SOSS)	Ph D	Gen-07 SC- 02 ST-01 OBC-04 (Total -14)	Dr. Suhas Shetgovek ar, Dr. Monika Misra	Master's Degree and/or M.Phil. Degree in Psychology	sshetgovekar@ign ou.ac.in monikamisra@ign ou.ac.in 011-29572721,	

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10.	Anthropology (SOSS)	Ph D	Gen-07 SC-02 ST-01 OBC-04 (Total -14)	Dr. Rashmi Sinha, Dr. P. Venkatrama	Master's Degree and/or M.Phil. Degree in Anthropology or equivalent areas - Sociology, History, Forensic Science, Demography, Public Health	rashmisinha@ignou.ac.in pallaramana@gmail.com 011-29572775; 29572729	
11.	Sociology (SOSS)	Ph D MPhil	Gen-06 SC-02 ST-01 OBC-03 (Total -12) Gen -03 SC-01 ST-01 OBC - 02 (Total -7)	Dr. R. Vashum	Master's Degree and/or M.Phil. Degree in Sociology or allied disciplines	rvashum51@gmail.com 011-29572715	
12.	Library and Information Science (SOSS)	Ph D	Gen-05 SC-01 ST-01 OBC-03 (Total -10)	Prof. Jaideep Sharma	Master's Degree and/or M.Phil. Degree in Library and Information Science	jaideep@ignou.ac.in 011- 29572740, 29571907	
13.	Political Science (SOSS)	Ph D MPhil	Gen-04 SC-01 ST-01 OBC-02 (Total -8) Gen -05 SC-01 ST-01 OBC - 02 (Total -9)	Prof. D Gopal	Master's Degree and/or M.Phil. Degree in Political Science or allied disciplines	dgopal@ignou.ac.in 011 – 29572727	

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14.	Economics (SOSS)	MPhil	Gen -01 SC-01 ST-01 OBC - 01 (Total -4)	Prof. Narayan Prasad	Only the candidates who have qualified UGC-NET with JRF in Economics are eligible.	nps20@rediffmail.com 011-29572708	No Entrance Test shall be conducted for MPhil Economics for July 2018 session
15.	Public Administration (SOSS)	Ph D	Gen-10 SC-03 ST-02 OBC-06 PWD - 01 (Total -22)	Prof. Uma Medury	Master's Degree and/or M.Phil. Degree in Public Administration OR Any Master's Degree with five years experience in Administration /Disaster Management	umamedury@gmail.com 011-29572741	
16.	History (SOSS) (Specializations available- Modern Indian History and Medieval Indian History)	Ph D	Gen-03 SC-01 ST-01 OBC-01 (Total -6)	Prof. A. R. Khan	Master's Degree and/or M.Phil. Degree in History	arkhan@ignou.ac.in 011-29572731	
17.	Translation Studies	MPhil	Gen-01 SC-00 ST-00 OBC-00	Dr. Jagdish Sharma	Master's Degree and/or M.Phil. Degree	jagdishsharma@ignou.ac.in rajendrapandey@ignou.ac.in	

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	(SOTST)		(Total -1) Gen-02 SC-01 ST-00 OBC-01 (Total -4)	Dr R P Pandey	in Translation Studies or in allied subjects	ignou.ac.in 011-29571625	
18.	Social Work (SOSW)	PhD MPhil	Gen - 10 SC-03 ST-01 OBC-05 (Total -19) Gen-04 SC-01 ST-01 OBC-02 (Total -8)	Dr. G. Mahesh	MSW / M.A. (Social Work) MSW / M.A. (Social Work)	gmahesh@ignou.ac.in 011-29571694	
19.	Environmental Science (SOITS)	PhD	Gen-11 SC-04 ST-02 OBC-07 PWD - 01 (Total -25)	Dr. Boyina Rupini, Dr. Sushmitha Baskhar	M.Sc Environmental Science and allied sciences & technology.	brupini@ignou.ac.in sushmithab@ignou.ac.in 011- 29573375, 29571121	
20.	Life Sciences (SOS) Are a of specialisation : 01 seat - Animal and medical physiology/ taxanomy . 05 seats - Ethnobotony,	PhD	Gen-05 SC-01 ST-01 OBC-03 (Total -10)	Prof. Neera Kapoor	M.Phil degree and a Post Graduate degree in a relevant area of the discipline with minimum 55 percent marks (50 percent marks for SC/ST/PH candidates) or an	neerakapoor@ignou.ac.in 011-29572838	Entrance Examination will not be conducted for PhD (Life Sciences) for July 2018 session

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	Micro biology and Ecology. 03seats - Entomology. 01 seat - Plant pathology (PlantGals) Ethnobotony				equivalent grade from a university or a recognized institution of higher learning. Or Qualified UGC-CSIR NET/ SLET/GATE / or an equivalent examination.	
21.	Management (SOMS)	PhD	Gen-14 SC-04 ST-02 OBC-07 (Total -25)	Prof. Neeti Agarwal	Master's Degree and/or M. Phil. Degree in Management Studies or in allied disciplines	phdmanagement@ignou.ac.in 011- 29573020
22.	Food & Nutritional Sciences (SOCE)	PhD	Gen-01 SC-01 ST-01 OBC-01 (Total -04)	Prof. Deeksha Kapur	Master's Degree and/or M.Phil. Degree in Nutrition/Dietetics/Clinical Nutrition	deekshakapur@ignou.ac.in 011-29572960
23.	Commerce (SOMS)	MPhil PhD	Gen-00 SC-02 ST-00 OBC-03 (Total -05) Gen-00 SC-02 ST-04 OBC-13 (Total -19)	Prof. M. S. S. Raju (Co-ordinator); Dr. Sunil Kumar (Co-ordinator)	Master's Degree and/or M.Phil. Degree in Commerce	mssraju@ignou.ac.in sunilkgupta@ignou.ac.in 011-29573032; 29573024

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24.	Hindi (SOH)	PhD	Gen-05 SC-01 ST-01 OBC-03 (Total -10)	Prof. Satyakam	Master's Degree and/or M.Phil. Degree in Hindi Language and Literature	satyakam@ignou.ac.in 011-29572751; 29572796
25.	Distance Education (SOE)	PhD MPhil	Gen-22 SC-07 ST-03 OBC-12 (Total -44) Gen-09 SC-02 ST-01 OBC-04 (Total -16)	Prof. Manjulika Srivastava	Master's Degree and/or M.Phil. Degree in Distance Education/Education/Mass Communication and New Media Studies Master's Degree in Distance Education/ MA Education/M.Ed / Masters in Mass Communication and new media study / any Masters Degree with B.Ed/M.Ed	manjulika@ignou.ac.in 011-29571826
26.	Nursing (SOHS)	PhD	Gen-01 SC-00 ST-01 OBC-01 (Total -3)	Prof. Pity Koul	Master's Degree and/or M.Phil. Degree in Nursing	pkoul@ignou.ac.in 011-29572807

Appendix-III

Syllabus for Entrance Test for Admission to M Phil/ Ph D Programmes July 2018 session

1. PH D PROGRAMME IN ANTHROPOLOGY (PHDAN)

Anthropology and Methods of Research

Introducing Anthropology: Defining Anthropology, Meaning, Scope, History, Branches of Anthropology, Emerging Frontiers in Anthropology

Field Work Tradition in Anthropology: Field Work and its Relevance, Ethnography, Techniques, Methods and Methodology, Genealogy and Pedigree

Research Design: Review of Literature and Statement of Research Problem, Theory, Research Design

Data Collection Techniques: Primary Data, Secondary Data, Biological Methods, Archaeological Methods

Statistical Analysis: Collection and Presentation of Data, Measures of Central Tendency and Dispersion, Statistical Distribution, SPSS and EXCEL.

Physical Anthropology

Introduction to Physical Anthropology: Definition and Scope, Relationship with Other Disciplines, Applied Physical Anthropology

Human Evolution: Principles of Evolution, Theories of Organic Evolution, Synthetic Theory, Palaeoanthropology

Primate Study: Living Primates, Primate Behaviour.

Biological Diversity: Concept of Race, Characteristic, Criteria of Biological Diversity, Racial Classification

Human Genetics: Human Genetics, Methods in Human Genetics, Population Genetics, Chromosomal Aberrations.

Human Growth and Development: Principles of Growth, Methods and Influencing Factors, Human Constitution and Physique, Reproductive Biology

Ecological Anthropology: Fundamentals of Ecology, Adaptation to Environment, Epidemiological Anthropology

Social Anthropology

Introduction to Social Anthropology: Social Anthropology: Nature and Scope, Philosophical and Historical Foundations, Relationship of Social Anthropology with Allied Disciplines; Applied Social Anthropology

Society and Culture: Concept of Society and Culture, Social Groups, Social Identity and Movements, Social Change in Indian Context

Anthropological Theories: Classical Theories, Functionalism, Structural Functionalism and Neo-Functionalism, Social Organisation and Dynamic Theories of Structure, Culture and

Personality, Marxism, Structuralism, Feminism, Post-Modernism and Post-Colonialism

Kinship, Marriage and Family: Kinship, Descent and Alliance Theories, Marriage, Family, Kinship, Family and Marriage in India

Religion: Concepts and Approaches to the Study of Religion, Rituals and Symbolism, Religious Specialists

Economic and Political Organisations: Concepts and Definitions, State and Stateless Societies: Political Institutions, Production, Consumption and Exchange, Political Power and Distribution of Resources

Indian Anthropology: Growth of Indian Anthropology. Contributions of anthropologists in India. Indian society and Culture.

Archaeological Anthropology

Introduction to Archaeological Anthropology: Definition and Scope, History and Development, Interdisciplinary Relations

Tool types and techniques in Archaeology: Tool Families, Tool-Technologies.

Geological Framework: Time and Space, Holocene Period.

Dating Methods: Relevance of Dating, Relative and Absolute dating

Lithic Cultures: Palaeolithic, Mesolithic and Neolithic.

Indus valley civilization.

2.MPHIL/ PHD PROGRAMME IN CHEMISTRY (MPHILCHEM/PHDCHEM)

PART A

RESEARCH METHODOLOGY

Objectives of research

Research methods versus Methodology

Types of research: Descriptive vs. Analytical; Applied vs.

Fundamental; Quantitative vs. Qualitative; Conceptual vs.

Empirical

Literature Review: Methods and Importance

Research design: Need, Types and Features of research design,

Formulating Research Problem

Collection and analysis of Data: Importance and Methods of

data collection, Data Analysis with Statistical Packages

Ethical issues in Research: Copy right, Intellectual Property

Rights; Plagiarism

PART B

Inorganic Chemistry

1. Chemical periodicity
2. Structure and bonding in homo- and heteronuclear molecules, including shapes of molecules (VSEPR Theory).
3. Concepts of acids and bases, Hard-Soft acid base concept, Non-aqueous solvents.
4. Main group elements and their compounds: Allotropy, synthesis, structure and bonding, industrial importance of the compounds.
5. Transition elements and coordination compounds: structure, bonding theories, spectral and magnetic properties, reaction mechanisms.
6. Inner transition elements: spectral and magnetic properties, redox chemistry, analytical applications.
7. Organometallic compounds: synthesis, bonding and structure, and reactivity. Organometallics in homogeneous catalysis.
8. Cages and metal clusters.
9. Analytical chemistry- separation, spectroscopic, electro- and thermoanalytical methods.
10. Bioinorganic chemistry: photosystems, porphyrins, metalloenzymes, oxygen transport, electron- transfer reactions; nitrogen fixation, metal complexes in medicine.
11. Characterisation of inorganic compounds by IR, Raman, NMR, EPR, Mössbauer, UV-vis, NQR, MS, electron spectroscopy and microscopic techniques.
12. Nuclear chemistry: nuclear reactions, fission and fusion, radio-analytical techniques and activation analysis.

Physical Chemistry:

1. Basic principles of quantum mechanics: Postulates; operator algebra; exactly-solvable systems: particle-in-a-box, harmonic oscillator and the hydrogen atom, including shapes of atomic orbitals; orbital and spin angular momenta; tunneling.
2. Approximate methods of quantum mechanics: Variational principle; perturbation theory up to second order in energy; applications.
3. Atomic structure and spectroscopy; term symbols; many-electron systems and antisymmetry principle.
4. Chemical bonding in diatomics; elementary concepts of MO and VB theories; Huckel theory for conjugated π -electron systems.
5. Chemical applications of group theory; symmetry elements; point groups; character tables; selection rules.
6. Molecular spectroscopy: Rotational and vibrational spectra of diatomic molecules; electronic spectra; IR and Raman activities – selection rules; basic principles of magnetic resonance.
7. Chemical thermodynamics: Laws, state and path functions and their applications; thermodynamic description of various types of processes; Maxwell's relations; spontaneity and equilibria; temperature and pressure dependence of thermodynamic quantities; Le Chatelier principle; elementary description of phase transitions; phase

- equilibria and phase rule; thermodynamics of ideal and non-ideal gases, and solutions.
8. Statistical thermodynamics: Boltzmann distribution; kinetic theory of gases; partition functions and their relation to thermodynamic quantities – calculations for model systems.
9. Electrochemistry: Nernst equation, redox systems, electrochemical cells; Debye-Huckel theory; electrolytic conductance – Kohlrausch's law and its applications; ionic equilibria; conductometric and potentiometric titrations.
10. Chemical kinetics: Empirical rate laws and temperature dependence; complex ; steady state approximation; determination of reaction mechanisms; collision and transition state theories of rate constants; unimolecular reactions; enzyme kinetics; salt effects; homogeneous catalysis; photochemical reactions.
11. Colloids and surfaces: Stability and properties of colloids; isotherms and surface area; heterogeneous catalysis.
12. Solid state: Crystal structures; Bragg's law and applications; band structure of solids.
13. Polymer chemistry: Molar masses; kinetics of polymerization.
14. Data analysis: Mean and standard deviation; absolute and relative errors; linear regression; covariance and correlation coefficient.

Organic Chemistry

1. IUPAC nomenclature of organic molecules including regio- and stereoisomers.
2. Principles of stereochemistry: Configurational and conformational isomerism in acyclic and cyclic compounds; stereogenicity, stereoselectivity, enantioselectivity, diastereoselectivity and asymmetric induction.
3. Aromaticity: Benzenoid and non-benzenoid compounds – generation and reactions.
4. Organic reactive intermediates: Generation, stability and reactivity of carbocations, carbanions, free radicals, carbenes, benzyne and nitrenes. 5. Organic reaction mechanisms involving addition, elimination and substitution reactions with electrophilic, nucleophilic or radical species. Determination of reaction pathways.
6. Common named reactions and rearrangements – applications in organic synthesis.
7. Organic transformations and reagents: Functional group interconversion including oxidations and reductions; common catalysts and reagents (organic, inorganic, organometallic and enzymatic). Chemo, regio and stereoselective transformations.
8. Concepts in organic synthesis: Retrosynthesis, disconnection, synthons, linear and convergent synthesis, umpolung of reactivity and protecting groups.
9. Asymmetric synthesis: Chiral auxiliaries, methods of asymmetric induction – substrate, reagent and catalyst controlled reactions; determination of enantiomeric and diastereomeric excess; enantio-discrimination. Resolution – optical and kinetic.
10. Pericyclic reactions – electrocycloisatation, cycloaddition, sigmatropic rearrangements and other related concerted reactions. Principles and applications of photochemical reactions in organic chemistry.
11. Synthesis and reactivity of common heterocyclic compounds containing one or two heteroatoms (O, N, S).
12. Chemistry of natural products: Carbohydrates, proteins and peptides, fatty acids, nucleic acids, terpenes, steroids and alkaloids. Biogenesis of terpenoids and alkaloids.

13. Structure determination of organic compounds by IR, UV-Vis, ^1H & ^{13}C NMR and Mass spectroscopic techniques.
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3. PHD PROGRAMME IN COMMERCE

Course 1 : Research Methodology (8 Credits)

Syllabus

1. Theory of Research : Meaning and Definition of Research, Types of Research, Research Approached (Scientific, Historical, Descriptive, Comparative, Institutional), Criteria of Good Research, Research and Business Decisions, Research Applications in Functional Areas of Business.

2. Research Process : Problem Selection and Research Design-Selecting a Topic for Research Study, Formulation of Hypothesis, Research Design (Concepts relating to Research Design, Major stops preparing a Research Design, Factors affecting Research Design.)

Techniques of Collecting Qualitative Data (PRA-Participatory Rural Appraisal, RRA - Rapid Rural Appraisal Case Study), Tools of Collecting Qualitative Data (Social Mapping Resource Mapping, Wealth Ranking of the House - holds, Preference Ranking, Focus Group Discussion etc.), Formatting and Processing of Qualitative Data

Sampling Techniques and Sample Design (Methods, Selection of Appropriate Methods and Sampling Criteria), Sampling Tests (Z test, T test, F test). Editing, Coding, Classification and Tabulation Diagrammatic and Graphic Presentation

3. Analysis of Data (Statistical Application in Research)

Statistics and Business Research

Probability Theory

Probability Distributions

Percentages and Ratios

Measures of Central Tendency

Measures of Variability

Correlation and Regression

Measurement of Trend

Association of Attributes

Construction of Indices

Hypothesis Testing

Scaling Technique

RCO – 002: SPECIALIZATION COURSE (In the selected area of research interest) FOR Ph.D./M.Phil

Area – 1: Accounting & Taxation

ACCOUNTING

Contents

1. Accounting: Information for Decision Making

Accounting Information: A Means to an End User's Perspective - Types of Accounting Information

Accounting Information Forms: - Determining Information Needs - The Cost of Producing Accounting Information, Users of Accounting Information - Objectives of External Financial Reporting - Characteristic of Externally Reported Information - Characteristics and Objectives of Management Accounting Information

Integrity of Accounting Information: Institutional Features - Professional Organizations - Competence, Judgment, and Ethical Behavior

Accounting Systems: Basic Functions of an Accounting System - Designing and Installation Accounting Systems.

Careers in Accounting: Public Accounting - Management Accounting - Governmental Accounting - Education

2. Presentation and Reporting of Accounting Information

Reporting the Results of Operations: Developing Predictive Information - Reporting Irregular Items Continuing Operations - Discontinued Operations, Extraordinary Items - Changes in Accounting Principles - Earnings per Share (EPS) - Basis and Diluted Earning per Share

3. Statement of Cash Flows

Statement of Cash Flows: Purpose of the statement - Example of a Statement of Cash Flows - Classification of Cash Flows - The Approach to Preparing a Statement of Cash Flows

Managing Cash Flows: Budgeting (The Primary Cash Management Tool - What Priority Should Managers give to Increasing Net Cash Flows?) - Some Strategies for Permanent Improvements in Cash Flow

4. Financial Statement Analysis

Techniques of financial statement Analysis: Common Size Financial Statements - Financial Statement Analysis Using Common Ratios - Profitability Ratios, Efficiency Ratios, and Solvency Ratios

Tools of Analysis: Trend Percentages, Component Percentages, Ratios, Standards of Comparison, Quality of Earnings, Quality of Assets, and the Relative Amount of Debt

Measures of Liquidity and Credit Risk: A classified Balance Sheet - Working Capital - Current Ratio, Quick Ratio, Debt Ratio - Evaluating Financial Ratios – Liquidity, Credit Risk, and the Law

5. **Accounting Standards**

Introduction – Accounting Standards in India – Importance of the Accounting Standards – Disclosure of Accounting Policies – Regulations for Valuation of Inventories – Rules for Cash Flow Statement – Norms for Events after Balance Sheet Date – Rules for Provisions and Contingencies – Norms for Net Income and Changes in Accounting Policies – Regulations for Depreciation Accounting – Norms for Revenue Recognition – Accounting for Fixed Assets – Accounting for Taxes on Income – Accounting for Intangible Assets – Norms for Consolidated Financial Statements – Need for Notes to Accounts – Other Accounting Standards – Computerization of Accounts – Indian Companies Providing their Accounts as per US GAAP and IFRS

6. **Global Business and Accounting**

Environmental Forces Shaping Globalization - Political and Legal Systems, Economic Systems, Culture, Technology and Infrastructure - Harmonization of Financial Reporting Standards

Foreign Currencies and Exchange Rates: Exchange Rates - Accounting for Transactions with Foreign Companies - Currency Fluctuations – Who Wins and Who Loses? - Consolidated Financial Statements That Include Foreign Subsidiaries

7. **Management Accounting**

An overview – Concepts and uses - Management Accounting Decision Making Authority - Management Accounting's Role in Decision Making - Management Accounting's Role in Performance Evaluation and Rewards

8. **Costing System and Analysis**

Activity Based Costing System: Introduction - Traditional manufacturing Costing System - Activity Based Costing (ABC) and Activity Based Management (ABM) System - Cost of Resource Capacity - ABC for Marketing, Selling and Distribution Expenses - ABC for Service Companies

Cost variance Analysis: Introduction – Material Variances – Labour Variances – Overhead Variances – Standard Cost Accounting

Revenue and Profit Variance Analysis: Introduction - Sales Variances - Profit Variances - Actual Profit and Budgeted: Reconciliation - Variance Reporting - Disposition of Variances

9. **Responsibility Accounting**

Introduction – Meaning and Objectives – Types of Responsibility Centres

Reference text books:

1. Williams, Haka, Bettner (2005) Financial & Managerial Accounting, the basis for business decisions, Tata McGraw-Hill, New Delhi.
2. M. Y. Khan, P. K. Jain (2007) Management Accounting, Text, Problems and Cases, The McGraw-Hill, New Delhi.
3. Asish K. Bhattacharyya (2006) Financial Accounting for Business Managers, Printice-Hall of India Pvt. Ltd., New Delhi.
4. Robert N Anthony, David F. Hawkins, Kenneth A Merchant (2007) Accounting Text and Cases, Tata McGraw-Hill, New Delhi.
5. N. Ramachandran, Ram Kumar Kakani (2008), Financial Accounting for Management, Tata McGraw-Hill, New Delhi.
6. Shashi K. Gupta (2002), Contemporary Issues in Accounting, Kalyani Publishers, New Delhi.
7. Aggarwal, M.P. (1981), Analysis of Financial Statements, National Publishing House, New Delhi.
8. S.N. Maheshwari (2004), Management Accounting and Financial Control, Sultan Chand and Sons, New Delhi.
9. S.N. Maheshwari, S.K. Maheshwari (2006), Corporate Accounting, Vikas Publishing House Pvt. Ltd. New Delhi.

Taxation

Direct Taxation – Law and Practice

1. **General Framework of Direct Taxation in India:** Different direct tax laws and their inter-relationship; Importance of Income Tax Act and Annual Finance Bill Relevant Constitutional provisions; harmonization of tax regime.
2. **Tax Planning:** Concept of tax planning; Tax planning with reference to setting up a new business; locational aspects; nature of business; tax holiday, etc. - Tax planning with regard to specific management decisions such as mergers and takeovers; location of undertaking; introduction of voluntary retirement; tax planning with reference to financial management decisions such as borrowing or investment decision; reorganization or restructuring of capital decisions - Tax planning with respect to corporate reorganization; tax planning with reference to employees' remuneration - Tax Planning vis-à-vis important provisions of wealth-tax including court rulings and legislative amendments.
3. **Tax Management:** Return and procedure for assessment; special procedure for assessment of search cases, e-commerce transactions, liability in special cases; collection and recovery of tax; refunds, appeals and revisions; penalties imposable, offences and prosecution.

Indirect Taxation – Law and Practice

4. **Indirect Taxes:** Special features of indirect tax levies – all pervasive nature, contribution to Government revenues; constitutional provisions authorizing the levy and collection of duties of central excise, customs, service tax, central sales tax and VAT.
5. **Central Excise:** Basis of chargeability of duties of central excise –goods, manufacture, classification and valuation of excisable goods, assessment procedure, exemption, payment, recovery and refunds of duties. Clearance of excisable goods; Central Excise Bonds; maintenance of accounts and records and filing of returns. CENVAT; Duties payable by small scale units. Set-off of duties –concept, meaning and scheme; Central Excise Concessions on exports; search, seizure and investigation; offences and penalty.
6. **Custom:** Levy of and exemption from, customs duties – specific issues and case studies; assessment and payment duties; recovery and refund of customs duties; drawback of duties; Confiscation of goods and conveyances and imposition of penalties; search, seizure and arrest, offence and prosecution provisions - Adjudication, Appeal and Revision; Settlement of Cases.
7. **Service Tax:** Introduction; Genesis of service tax in India; Constitutional Provisions; Definition of service; Education Cess and Secondary and Higher Education Cess
8. **Tax Planning and Management:** Tax Planning, Tax Management, Tax Avoidance and Tax Evasion

Reference text books:

1. Dr. Vinod Kumar Singhania & Dr. Monica Singhania, (2014), Direct Taxes Planning and Management, Taxmann, New Delhi
2. Dr. Vinod Kumar Singhania & Dr. Monica Singhania, (2014), Income Tax including Central Sales Tax, Taxmann, New Delhi
3. R.K. Jain, (2014), Income Tax Planning & Management, Sahitya Bhawan, Agra
4. Dr. P.K. Jain & R.K Tyagi, (2014), Income Tax law & accounts, Sanjay Sahitya Bhawan, Agra
5. R.K. Jain (2014) Excise Customs and Service Tax Case References, Jain Book Depot, New Delhi

Area – 2: International Business

1. **Basics of International Business Environment** – Social, Cultural, Economic, Political, Demographic, Ecological and Legal Environment.
2. **Balance of Payments** – Concept, Balance of Payments Accounting, Deficit and Surplus, Factors affecting Balance of Payments and Equilibrium and Disequilibrium of Balance of Payments. India's Balance of Payments.
3. **Government Influence on Trade** – Rationale for government intervention, Tariff and Non tariff barriers. Impact of tariff and non tariff barriers on international trade.
4. **Cross Cultural Management** – Hofstede and other studies related to Cross Cultural Management
5. **Introduction to Globalization** – Concept, Major forces, Effects of Globalization on the world economy and developing countries, Globalization strategies of Indian Companies, Cross border Mergers and Acquisitions
6. **International Investment** – Concept, Types of International Investment, FDI and Developing Countries, Determinants of FDI, Recent Trends in FDI flows, Trade Related Investment Measures, Multilateral Investment Agreements.
7. **Transnational Corporations** – Features of Transnational Corporations, Recent Trends in Transnational Corporations, Issues And Controversies Of Transnational Corporations. TNCs and Developing Countries.
8. **Technology Transfer** – Rationale of Transfer of Technology, Recent Trends and Current Issues, Non Equity Forms of Technology Transfer, Intellectual Property Rights, India and Transfer of Technology – strategies and challenges.
9. **World Trade** – Recent Trends - composition and direction, Problems of Developing Countries.
10. **International Trade in Services** – Role of Trade in Services in Economic Development, Composition and Direction of International Trade in Services, Challenges of International Trade in Services.
11. **Multilateral Trading System** – Functions and Structure of WTO, Multilateral Trade Agreement and Plurilateral Trade Agreement, India and WTO. Recent issues related to Multilateral Agreements. Impact of Multilateral Trading System on World Trade.
12. **Regional Economic Groupings** – Forms of Regional Groupings, Rationale and Impact of Regional Economic Groupings, Major Regional Economic Groupings - European Union (EU), North American Free Trade Agreement (NAFTA), Association of South etc. East Asian Nations (ASEAN), South Asian Association for Regional Corporation (SAARC)

- 13. International Product Planning** – Product Decision, International Product Life Cycle, New Product Development. Product diffusion.
- 14. International Branding and Packaging** – Objectives and Advantages, Brand Familiarity Levels, Branding Strategies , Local Brand Vs Global Brand, Impact of Brands on Buying Behaviour, Scope for Indian Brands, Functions and Importance of Packaging, Factors Influencing Packaging Decision, Special Considerations in International Marketing.
- 15. International Pricing** – Objectives and factors affecting Pricing Decisions, Pricing Methods and Practices in International Marketing, Transfer Pricing, Counter Trade and Pricing Issues.
- 16. International Distribution** – International Channel System, Types of Intermediaries, Factors affecting Channel Choice, Selecting Overseas Agents.
- 17. International Marketing Communication** – Promotion Mix, Objectives and Role of International Marketing Communication, Key Issues in International Marketing Communication, Major Marketing Promotion Tools.
- 18. International Advertising** – Rationale for International Advertising, Adaptation Vs Standardization, Advertising Appeals and Product Characteristics, Impact of Advertising on buying decisions, Global Media Decisions, Selecting Advertising Agencies, Advertising Regulations, Sales Promotion Tools.
- 19. International Retailing** – International Store Operations and Supply Chain Management of Leading International Retailers. International Retail Formats, International Retail Marketing Strategy.
- 20. Emerging Trends and Issues in International Marketing** – E-Marketing, Green Marketing, Digital Marketing, Multilevel Marketing (MLM), Web-based Marketing, and Network Marketing etc.

Further Readings

- WTO Report
- UNCTAD Report
- World Investment Report
- World Economic Survey, etc.

Area – 3: BANKING AND FINANCE

- 1. Commercial Banks:** Overview of Commercial Banking in India; Role and Functions of Commercial Banks; Indian Banking in Pre,Nationalization and Post,nationalization Phases.
- 2. Banking Sectoral Reforms:** Banking Sector Reforms and their Implications on Indian Banking Sector; Changing Role of Indian Banks; Reforms and Restructuring of Banks; Management of Private Sector Banks and Public Sector Banks; Management of Banks in Rural Areas.
- 3. Basic Banking Services:** Opening of accounts for companies, trusts, societies, government and public bodies; Importance of AML.
- 4. Credit concepts:** Principles of lending; Various credit Products/ Facilities - working capital and term loans; Credit Appraisal Techniques; Approaches to lending; Credit Management, credit monitoring ,NPA Management; Credit Risk Analysis Framework.
- 5. Documentation:** Different types of documents; Documentation Procedures; Stamping of documents Securities; Types of collaterals and their characteristics; Priority Sector Lending - Sectors, Targets and Issues/Problems.
- 6. Recent Developments:** Agriculture/SMEs/SHGs/SSI/Tiny Sector; Financing New Products & Services: Factoring, Securitization, bancassurance, Mutual Funds, Merchant Banking, Hire Purchase, Securitization, Venture Capital, Leasing and Depository, Credit Cards/Home Loans/Personal Loans/Consumer Loans; IT Application in Banking.
- 7. Credit Rating in India:** Concept and reasons of credit rating; Credit rating institutions in India, Limitation of Credit Rating.
- 8. Reforms in Banking and Finance:** Reports of the committees; Chakravarty committee, Narsimham Committee I & II :FDI in Banking Sector.
- 9. International Banking:** An Overview; Rationale and Scope of International Banking Regulation; Capital Adequacy, loan loss provisioning and other Regulatory Controls.
- 10. International Financial System:** An overview; Foreign Exchange Markets; Exchange rate determination; International party theory and Fisher effect; Foreign Exchange Risk Management.

- 11. Financial Institutions:** Role of FDI, NBFCs and other International Financial Institutions
- 12. Financial Markets:** Structure; Institutions and Operation Mechanism; Money Market in India; Importance; Feature and Instruments; Capital Market in India, New Issues Market and Secondary Market (Stock Exchanges); salient features and operation, changing scenario of Indian Stock Market.
- 13. Valuation of Securities:** Equity shares and Bonds valuation models; CAPM, Arbitrary pricing theory.
- 14. Corporate Valuation:** Approaches to Corporate Valuation; Restructuring; merger, acquisition and disinvestment leveraged buy-outs.

References

Chandra, Prasanna, Financial Management Theory and Practice, Tata McGraw-Hill Publishing Company Ltd., New Delhi, 2007

Shapiro Alan C., Multinational Financial Management, Prentice Hall of India Ltd., New Delhi

Khan, M.Y. and Jain, P.K., Financial Management Text, Cases and Problems, Tata McGraw-Hill Publishing Company Ltd., New Delhi, 2007

Kishore, Ravi M.: Financial Management, Tax, Delhi.

Van Horne, James C., Financial Management and Policy, Prentice Hall of India Ltd., New Delhi

Damodaran on Valuation: Security Analysis for Investment and Corporate Finance (Wiley Finance)

Neelam C Gulati (2011) Banking and Insurance: Principles & Practices, 3rd edition, Excel Books, Daryaganj New Delhi

Gomez Clifford (2011) Banking and Finance: Theory, Law and Practice, 3rd edition, PHI, Daryaganj New Delhi

Indian Institute of Banking & Finance (2012): Principles and Practices of Banking, 2nd edition, McMillan, Daryaganj New Delhi.

Indian Institute of Banking & Finance (2012): Legal and Regulatory Aspect of Banking 2nd edition, McMillan, Daryaganj New Delhi.

N K Sinha (2009): Money Banking and Finance, 5th edition, Bsc Publisherco, Daryaganj, New Delhi

Area 4: MARKETING MANAGEMNT

1. Defining Marketing for the 21st century

The new marketing realities: Marketing in 21st century, Markets: Consumer and Organisational markets, Strategic planning & the marketing environment ,Current issues in marketing ,Marketing research ,Buyer behaviour ,Segmentation, targeting and positioning, Value capture, Value creation ,Value delivery ,Value communication, Major Societal Forces, New Consumer Capabilities, New Company Capabilities, Integrated Marketing, Internal Marketing, Performance Marketing, Connecting with Customers, Shaping the Market Offerings.

The Demographic Environment and its implication in marketing management: Economic Environment, Social-Cultural Environment, Natural Environment, Technological Environment, Political-Legal Environment.

Creating Customer Value: Satisfaction and Loyalty, Customer Perceived Value (CPV), Total Customer Satisfaction, Monitoring Satisfaction, Maximizing Customer Lifetime Value (CLV), Cultivating Customer Relationships.

Analyzing Consumer Markets: What Influences Consumer Behaviour? Cultural Factors Social Factors, Personal Factors, Key Psychological Processes.

Analyzing Business Markets: Organizational Buying, The Business Market Versus the Consumer Market, Delivering Superior Customer Value, Managing Business-to-Business Customer Relationships, Business Relationships: Risks and Opportunism, Segment Marketing, Niche Marketing, Local Marketing, Balancing Customer and Competitor Orientations. Creating Brand Equity, Building brand equity, Measuring brand equity, Devising a branding strategy, crafting brand positioning.

2. Marketing Decisions

Product Decisions: Setting Product Strategy, Differentiation, Product and brand relationship, The Product Hierarchy, Product Systems and Mixes, Product-Line Analysis Product-Line Length, Packaging, Labeling, Warranties, and Guarantees.

Designing and Managing Services: The Nature of Services, Categories of Service Mix Distinctive Characteristics of Services, Service Experience , Service Innovation, Service Delivery, Service Quality, service recovery and its implications on business. Managing Service Brands, Developing Brand Strategies for Services, Developing Service Offers for Rural Areas, Managing Product-Support Services, Identifying and Satisfying Customer Needs, Postsale Service Strategy.

Pricing Decisions: Developing Pricing Strategies and Programs, Consumer Psychology and Pricing, Setting the Price, Adapting the Price, Geographical Pricing (Cash, Countertrade, Barter), Price Discounts and Allowances, Promotional Pricing, Differentiated Pricing, Pricing for Rural Markets, Initiating and Responding to Price Changes, Responding to Competitors' Price Changes

Distribution Decisions (logistics decisions): Designing and Managing Integrated Marketing Channel, Marketing Channels and Value Networks, Channel Integration and Systems, Vertical

Marketing Systems, The Importance of Channel Stewards, Horizontal Marketing Systems, Integrating Multichannel Marketing Systems, Conflict, Cooperation, and Competition, Channel Conflict and Competition, Managing Channel Conflict, Dilution and Cannibalization, Legal and Ethical Issues in Channel Relations, Managing Retailing, Wholesaling, and Logistics.

Promotion Decisions: Communicating Value, Designing and Managing Integrated Marketing Communications, The Changing Marketing Communication Environment, Marketing Communications, Brand Equity, and Sales, The Communications Process Models, Developing Effective Communications, Celebrity Endorsements as a Strategy, Selecting the Communications Channels, Establishing the Total Marketing Communications Budget, Deciding on the Marketing Communications Mix, Managing the Integrated Marketing Communications Process, Implementing IMC, Managing Mass Communications: Advertising, Sales Promotions, Events and Experiences, and Public Relations, Developing and Managing an Advertising Program, Communicating to the Rural Audience, Deciding on Media and Measuring Effectiveness, Sales Promotion in Indian market, Events and Experiences, Public Relations, Managing Personal Communications: Direct and Interactive Marketing, Word of Mouth, and Personal Selling, Direct Marketing, Public and Ethical Issues in Direct Marketing, Interactive Marketing, Placing Ads and Promotions Online, Word of Mouth, Buzz and Viral Marketing, Creating successful long term growth.

3. **Marketing research**

Introduction to Marketing Research, Qualitative and quantitative research methods, Sampling methods, Questionnaire design, reliability and validity. Online survey method, Data preparation and data presentation (graphing), Analysis of Variance (ANOVA) and Analysis of Covariance (ANCOVA), Cluster Analysis, Factor analysis, Presenting research information

4. **Emerging Trends in marketing:** Rural Marketing, Green marketing, Experiential marketing, Digital Marketing, e-business, Online marketing, Online retailing, Neuroscience and consumer, Sports Marketing, Media marketing and advertising, Brand Management, Innovation and marketing

Reference Books

- Marketing Management by Arum Kumar and N Meenakshi
- The Rural Marketing Book by Kashyap Raut
- Marketing Management a south Asian Perspective by Philip Kotler, Kevin Lane Keller, Abraham Kashi and Mithileshwar Jha, Pearson Prentice Hall, 2009
- Research Methodology, Concepts and cases by Deepak Chawla and Neena Sondhi, Vikas Publishing house private limited
- Marketing management Ranjan Saxena, Tata McGraw Hill Publishing Company limited
- Marketing management, Cases and Concepts, Nihilesh Dholakia, Rakesh Khurana, Labdhi Bhandari, Abhinandan K jain, Macmillan India

Area 5: ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT

1. Entrepreneurship and economic development

Entrepreneurship theory and literature: Entrepreneurship in India and abroad, Entrepreneurial motivation (socio- economic factors in entrepreneurship development, basic skills in entrepreneurship), Entrepreneurial environment, Entrepreneurship development Programmes, Entrepreneurial functions, Analysis of barriers in entrepreneurship development, Analysis of success factors of entrepreneurship development.

Entrepreneurship's Importance: Economic impact of entrepreneurial firms, Entrepreneurial Firms' impact on society, Entrepreneurial Firms' impact on larger firms, Entrepreneurial Firms' impact on overall economic development of a nation Entrepreneurship development.

2. Creativity and Innovation in business

Encouraging creativity at the firm level, protecting ideas from being lost or stolen, IPR, Creation of effective innovation, Market dynamics and new technology, Diffusion and adoption of innovations, Marketing and sales of technology based products and services.

3. Enterprise creation

Screening of ideas, opportunity identification and selection, moving from an idea to an entrepreneurial firm, New enterprise creation: Conceptual and analytical tools to understand, analyze and manage critical aspects of new enterprise, Business plan preparation and Analysis, feasibility analysis of business (product/ service feasibility, industry/ market feasibility, organizational feasibility and Financial feasibility analysis, Industry and competitor analysis), Business crisis, Family business management, Small and medium enterprises (threats and opportunities),

Ddeveloping an effective Business models: The importance of business models, How business models emerge, potential fatal flaws of business models.

4. Enterprise Management

Small and medium enterprise (managing and growing entrepreneurial firm):

Essentials of management principles, its application on enterprise management, planning, importance and application of planning in an organisation, strategic planning and its application.

Human resource Management: recruitment, selection and induction of key employees, training and development, performance appraisals, application of exit interviews etc., Board of directors, Professional advisers, lenders and investors, other professionals.

Organisation Behaviour: Motivation and behavior, designing Motivating jobs, perception, personality, Stress and behavior, Group behavior, Intergroup relations, conflict and its impact on organization, Leadership in organisation, followership, transaction analysis, analysis and application of leadership styles, Organisation structure and design, Organisational change and development, organizational culture and climate.

Controlling (PERT, CPM and other emerging methods to establish control in an organization. Managing human resources and organization development and dynamics, Personnel and Industrial relations, Sources of capital and capitalization process, Venture capitals, Angel investors etc, Intrapreneurship.

5. **Micro business development**

What are micro businesses, Role of Government in micro business development, Importance of micro businesses in an economy ,Micro finance , Self help groups, Direct funding from financial institutions.

6. **New Age entrepreneurship**

Agri- entrepreneurship, Edu-preneurship (education/academic entrepreneurship), Techno-preneurs (nano technology, bio technology)

7. **Social Entrepreneurship**

Social entrepreneurship, social entrepreneurs as change agents, financial sustainability Social entrepreneurship in India and abroad

8. **Women Entrepreneurship**

State of women Entrepreneurship in India. Barriers to women Entrepreneurship development.

9. **Business ethics**

Corporate Social responsibility

Corporate governance

10. **Succession Planning**

Business growth and need of succession Planning in India. Its role and importance in expansion management.

Reference Books:

- Small Business Management and Entrepreneurship by David Stokes, Nicholas Wilson
 - Think and Grow Rich by Napoleon Hill an e-book
 - Entrepreneurship and small business management by Norman M Scarborough
 - Entrepreneurial Development By Vasant Desai
 - Entrepreneurship and entrepreneurial Development by M. Gangadhar Rao
 - Organisational Behaviour By Jit S Chandan, Vikas publishing house Private Limited
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4. .MPhil / PhD Programme in Distance Education (MPHILDE/ PHDDE)

The broad areas to be covered in the entrance test will be:

- Current Indian Higher Education Scenario
- Major issues confronting higher education system
- Expansion and current status
- Modernization of Higher Education
- Expansion Growth of Open and Distance Learning in India.
- Genesis and Growth of ODL
- Structure and Governance of ODL Institution
- Design and Development of Course Materials
- Learner Support in ODL
- Pedagogy of ODL Today

The format of the question paper will be as follows

S. No.	Type of Questions	Marks	No. of Question Multiply with Marks	Total Marks	Expected Time for Answering the Questions	Remarks
1.	Objective Type	50	50 Q x 1	50	50 Minutes	50 Question of one mark each (Four multiple choice to be given)
2.	Short Answer Type	50	10 Q x 5	50	70 Minutes	10 Question of 5 marks each (to be answered in 250 words each)
3.	Long Answer (Essay Type)	50	02 Q x 25	50	60 Minutes	02 Questions of 25 Marks each (To be answered in 600 words each)
	Total	150	61 Que	150	180 min	

5. PH D PROGRAMME IN ENVIRONMENTAL SCIENCE (PHDEV)

RESEARCH METHODOLOGY: Meaning of Research in Environmental Sciences, Characteristics and Types of Research, Hypotheses, Methods of Research, Major emerging areas in environmental sector and interdisciplinary research, problems encountered by researchers in India in the field of Environmental Science. Basic concepts of Techniques of defining research problem; literature review, types of data collection. Basic concepts in analytical techniques of chromatography & spectroscopic methods. Ethical, legal, social and scientific issues in Environmental Science Research. Basic concepts in writing research papers, reports and research proposals. Role of IPR in Research and Development.

Subject areas: Environmental Chemistry, Environmental Biotechnology, Environmental Geomicrobiology, Environmental management, Natural resource management, Climate change, Sustainabilityscience.

6. PH D PROGRAMME IN FOOD & NUTRITIONAL SCIENCES (PHDFN)

A. Research Methods and Biostatistics

(50 Marks)

Basic Concepts; Formulation of Research Problem; Design Strategies in Research – Descriptive Studies, Analytic Studies, Experimental studies, Intervention trials etc.; Methods of Sampling; Data Collection Tools and Techniques; Presentation and Summarization of Data; Graphical presentation of quantitative data; Measures of Disease Frequency and Association; Reference Values, Health Indicators and Validity of Diagnostic Tests; Measures of Central tendency; Measures of Variability; Measures of Relationship – Correlation, Hypothesis Testing – parametric and non-parametric tests; Proportions, Relative risk, Odds ratio;

B. Subject Specific

(50 Marks)

Advance Nutrition

Nutrition: Basic concepts and physiological requirements; Nutritional needs during the life cycle: Dietary Reference Intake: Basic Concept, Energy Requirements, Protein and Amino Acid Requirement, Fat and Fatty Acid Requirements, Fat- Soluble Vitamins and Water- Soluble Vitamins, Minerals; Nutrition through the Life Cycle, Sports Nutrition, Nutrition during Special Conditions – Emergency, High altitude, space mission.

Clinical and Therapeutic Nutrition

Introduction to diet therapy and therapeutic nutrition; Adaptations of therapeutic diets; Nutritional management of fevers and infections; Nutrition in critical care; Nutritional management of patient with burns, Trauma, sepsis and surgery; Nutritional management of food allergies and food intolerance; Nutrition, diet and cancer; Nutrition care for weight management; Nutritional management of cardiovascular diseases; Nutritional management of metabolic disease; Nutritional management of gastrointestinal tract disorders; Nutritional management in pancreatic, gall bladder and liver diseases; Nutritional management of renal disease; Nutritional management of neurological disorders; Paediatric and geriatric nutrition .

Public Nutrition

Concept of Public Health Nutrition, Public Nutrition: Multidisciplinary Concept; Nutritional Problems of Public Health Importance – VAD, PEM, Anaemia, IDA, Zinc deficiency and Vitamin D deficiency; Health Economics and Economics of Malnutrition; Food and Nutrition Security; Population Dynamics; Assessment of Nutritional Status in Community Setting Methods and Techniques; Nutrition Monitoring and Surveillance; National Nutrition Policy; Strategies to Combating Public Nutrition Problems; Nutrition Programmes; Programme Management and Administration; Conceptualization and the Process of Nutrition Education, Behaviour Change communication; Nutrition Education Programmes – Formulation, Implementation, Evaluation.

Entrepreneurship and Food Service Management

History and Development of Food Service System; Planning a Food Service Unit; Setting up a Food Service Unit; Entrepreneurship and Food Service Management; Menu Planning; Food Purchasing and Storage; Quantity Food Production; Food Management: Records and Controls; Delivery and Service - Goals, Styles and Different Systems; Administrative Leadership; Staff Planning and Management; Personnel Functions: Work Productivity; Plant and Equipment Maintenance; Plant – Sanitation and Safety, HACCP, risk analysis; Issues in Worker Safety and Security; Issues in Food safety, Standards and Quality control; Food Adulteration, Additives, Contaminants.

7. PH D PROGRAMME IN GENDER AND DEVELOPMENT STUDIES (PHDGDS)

COURSE- I (8 Credits)

1. Gender and Development: Concepts and Theories (8 Credits)

1: Concepts and Theories

Basic Concepts, Gender Based Division of Labour in Pre-industrial & Industrial Society, Feminism and Feminisms, Theories in Gender Economics

2: The Development Debate

WID- WAD- GAD, Power and Decision making, Negotiation of Spaces, Gender and Property Rights, HDI, GDI, GEM- Approaches & Indicators

3: Gender Profile: Demographic, Nutrition and Health Dimensions

Demographic Characteristics, Trajectory of Migration, Nutritional Needs, Gender and Health: The Life Cycle Approach, Occupational Health

4: Gender, Culture, Education and Social Development

Culture, Ethnicity and Gender, Communication Media and Gender Issues, Education and Social Development, Emerging Roles and Identities, Social Equity and Distributional Aspects

5: Gender and Livelihoods

Sustainable Environment, Food Security, Land Rights, Gender, Water and Sanitation, Security of Tenure

6: Gender and Work

Productive and Unproductive Work, Female Headed Households, Women in Poverty Groups, Visibility of Women in Statistics and Indicators, Gender Concerns in Formal and Informal Sector

7: Case Studies and Selected Readings

COURSE- II (8 Credits)

2. Research Methodology in Gender and Development Studies (8 Credits)

1: Researching Gender- I

Methodology: Epistemology, Ontology and Social Inquiry; Contextualizing Gender: Debates (Marxism, Hermeneutics, Post- modernism, Post- colonialism and Post-structuralism); Changing Notions of Development: Debates in Development-Underdevelopment (Dependency Theory and its Critiques; WAD/WID/GAD; Sustainable Development, Ecological Security); Construction of Gender, Variations in Femininity and Masculinity: Cross- Cultural Perspectives; Sex Role Ideology; Ethnographic and Cultural Studies; Life Histories and Narratology/Discourse Analysis

2: Researching Gender- II

Gender Segregation in the Labour Force, Processes of Gendering and the Institutionalization of Gender, Studying Gender Relations, Household and Domestic Labour, Gender Analysis, Poverty and Food Security, Basic Needs and Development Goals

3: Social Inquiry: A Feminist View

Feminist Epistemology, Feminist Paradigms, Feminist Research Methods and Ethics, Situating Differences, Interdisciplinary Methods in Feminist Research

4: Research Design, Types and Strategies

Research Design, Exploratory Studies, Surveys, Historical, Experimental, Ethnographic and Case Studies; Types of Research- Fundamental, Applied Research, Action Research, Experimental, Ex-Post Facto Research, Descriptive, Correlational Research, Participatory Research; Special Approaches for Studying Gender- Sensitive, Problem- Centred, Policy- Relevant and Action Oriented Research; Linking Policy and Research as Strategies for Advocacy

5: Sampling

Definition of Population, Sample, Merits and Demerits of Sampling; Probability Sampling: Random Sampling, Multi-stage Sampling, Cluster Sampling, Non- Probability Sampling, Purposive Sampling, Convenience Sampling, Quota Sampling; Sampling Designs for Various Types of Research; Critical Review of Sampling Design of Different Research Studies

6: Tools and Techniques of Research

Research Entrance Test July 2018

Questionnaire, Interview (Media and Internet), Scaling, Measurement, Focus Group Discussions, Observation, Narration, Gender Analysis Matrix and Impact Flow Chart

7: Selected Studies in Gender and Development

Factors Determining and Influencing Gender and Development; Gender Division of Responsibility for Labour, Time use and Management; Women's Status and Challenges; Household allocation of Resources; Access to Natural Resources; Time scale for Rural Households; Value Added Analysis for Households; Production/Goods/Resources; Household Decision Making; Security Lapses, Provisions and Challenges

8: Data Analysis

Quantitative Data Analysis; Parametric Tests used for Quantitative Data Analysis; Qualitative Data Analysis, Non-Parametric Tests used for Analysis of Qualitative Data; Presentation of Data (Tables, Graphs etc.); Interpretation of Data

9: Preparing and Presenting Research Reports

Evaluation Research; Report Writing/Paper Presentation, Bibliography/References/Citations; Research Ethics; Research Proposals Seeking Grants; Research Funding Sources

8. PH.D. PROGRAMME In GEOGRAPHY (PHDGG)

PART A

RESEARCH METHODOLOGY

Objectives of research; Research methods versus Methodology

Types of research: Descriptive vs. Analytical; Applied vs. Fundamental; Quantitative vs. Qualitative; Conceptual vs. Empirical

Literature Review: Methods and Importance

Research design: Need, Types and Features of research design, Formulating Research Problem

Sampling Techniques: Probability and Non-probability sampling

Collection and analysis of Data: Importance and Methods of data collection, Data Analysis with Statistical Packages

Research Entrance Test July 2018

Use of Cartography, Remote Sensing, GIS and GPS in Geographical Research

Ethical issues in Research: Copy right, Intellectual Property Rights; Plagiarism

PART -B **Geography**

Unit 1: Geographical Thought

Geography during the Ancient and Medieval Period, Foundations of Modern Geography: Contribution of German, French, British and American Schools; Conceptual and Methodological Developments during the 20th Century, Dichotomy between Systematic Vs. Regional Geography, Physical Vs. Human Geography, and Determinism Vs. Possibilism; Areal Differentiation and Spatial Organisation, Quantitative Revolution, Impact of Positivism, Humanism, Radicalism and Behaviouralism in Geography.

Unit 2: Geography of India

Physiography, Climate, Natural Resources: Vegetation, Soils, Water, Coastal and Marine, Mineral and Power; Agriculture, Agro-Climatic Regions, Irrigation, Major Industries and Industrial Regions, Population, Settlement Patterns, Urbanisation, Transport and Communication, Major Geographical Regions of India.

Unit 3: Methods and Techniques in Geography

Cartography, Remote Sensing, GIS and GPS: Map as a Tool in Geographical Studies, Techniques Showing Spatial Patterns of Distribution, Types of Maps: Composite, Choropleth, Isoleth and Chorochromatic; Accessibility and Flow Maps, Cartographic Representation of Data, Computer Applications in Cartography, Symbolisation and Generalisation; Principles of Remote Sensing, GIS and GPS; EMR, Platforms and Sensors, Elements of Image Interpretation, Components of GIS, Data Structure, Applications of Remote Sensing, GIS and GPS in Geography.

Statistical Methods: Data Sources and Types of Data, Statistical Diagrams, Descriptive Statistics, Measures of Central Tendency, Measures of Dispersion, Lorenz Curve and Gini Coefficient, Correlation and Regression, Theory of Probability, Sampling Techniques and Tests of Significance, Scaling: Ranking Method, Normal Distribution and Z-Score.

Unit 4: Physical and Human Geography

Geomorphology: Fundamental Concepts, Endogenic and Exogenic Forces, Geosynclines and Mountain Building, Isostasy, Continental Drift and Plate Tectonics, Denudational Processes: Mass Wasting, Weathering and Erosion; Cycle of Erosion and Evolution of Landscape: Theories of Davis, Penck and King; Fluvial, Glacial, Aeolian, Karst and Coastal Landscapes.

Climatology and Biogeography: Composition and Structure of the Atmosphere, Insolation and Heat Budget of the Earth, Temperature, Precipitation, Atmospheric Pressure and General Circulation of Winds, Monsoons and Jet Streams, Stability and Instability of the Atmosphere, Air-Masses, Fronts, Cyclones, Koeppen's and Thornthwaite's Classification of World

Research Entrance Test July 2018

Climates, Hydrological Cycle, Flood and Drought, Air Pollution, Global Warming, Human Ecosystem, Bio-Diversity, Conservation and Management of Ecosystems.

Oceanography: Physical and Chemical Properties of Sea Water: Temperature and Salinity of the Oceans; Origin of Ocean Basins, Bottom Reliefs of Indian, Atlantic and Pacific Oceans, Ocean Deposits, Coral Reefs, Ocean Currents and Tides, Sea-Level Changes.

Population Geography: Distribution, Growth and Migration, Sex-Ratio, Literacy, Demographic Transition.

Settlement Geography: Site, Situation, Types, Size, Spacing and Internal Morphology of Rural and Urban Settlements, Urban Fringe, City Region, Umland, Settlement Systems, Primate City, Rank-Size Rule, Settlement Hierarchy, Christaller's Central Place Theory.

Economic Geography: Recent Approaches in Economic Geography, Location of Economic Activities and Spatial Organisation of Economies; Classification of Economies; Sectors of Economy: Primary, Secondary, Tertiary; Landuse and Landcover, Natural Resources: Renewable and Non-Renewable; Conservation of Resources.

Agricultural Geography: Concept and Techniques of Delimitation of Agricultural Regions; Measurement of Agricultural Productivity and Efficiency; Crop Combinations and Diversification; Von Thunen's Model, Agricultural Regions of the World.

Industrial Geography: Classification of Industries, Weber's and Losch's Theories of Industrial Location, Resources-Based and Footloose Industries.

Geography of Transport and Trade: Models of Transportation and Transport Cost, Inter-Regional and Intra-Regional Accessibility and Connectivity; Comparative Cost Advantages.

Political Geography: Global Strategic Views (Heartland and Rimland Theories), Geopolitics, Concept of Nation, State and Nation-State, Boundaries and Frontiers, Politics of World Resources, Geography and Federalism.

Social Geography: Social Structure and Social Processes, Elements of Social Geography, Ethnicity, Tribe and Caste, Concept of Social Well-Being, Environment and Culture, Concept of Culture: Areas and Cultural Regions, Dwelling Places as Cultural Expressions.

Regional Planning: Concept of Region, Types of Regions and Methods of Regionalisation, Regional Hierarchy, Regional Planning, Regional Planning in India, Concept of Development, Indicators of Development, Regional Imbalances, Growth Pole and Growth Centers.

9. PH.D. PROGRAMME IN GEOLOGY (PHDGY)

Structure:

Section	Name of the Section	Sr. No.	Course Title
A	RESEARCH METHODOLOGY	1	Research Methodology in Geology
B.	DISCIPLINE SPECIFIC	2	Physical Geology and Geomorphology

Research Entrance Test July 2018

	COURSES	3	Structural Geology and Tectonics
		4	Stratigraphy and Palaeontology
		5	Mineralogy
		6	Petrology
		7	Georesources and Economic Geology
		8	Geochemistry
		9	Applied Geology

SECTION A. RESEARCH METHODOLOGY

1. Research Methodology in Geology: Definition, outcome and importance of geological research; theory and philosophy of research methodology in context to geology; emerging areas and interdisciplinary research in geology;

Identifying and defining research problem; techniques involved in defining research problem and identifying gaps; sources of literature; implications of literature collection and its review.

Preparation and planning for fieldwork; field kit and equipments; safety measures in field; field procedures and precautions taken during sampling; maintenance of field notebook; uses of topographical maps and satellite images; selection of traverses; recognition of geological features, rock types and stratigraphic contacts in field; use of clinometer compass, measurement of dip and strike of strata; measurements of geologic sections; uses of GPS; recording field observations in field notebook; geological mapping.

Data collection; sampling methods; data collection methods in sedimentology, palaeontology, stratigraphy, structural geology and tectonics, mineralogy, petrology, ore geology and hydrogeology; classification and presentation of data; role of statistics and computers in research; use of computer in data processing; methods of communicating and displaying analysed data; applications of Geographic Information System.

Thin section preparation; petrological and palaeontological microscopes; Ore microscopy; SEM microphotography; preparation of samples for geochemical and XRD analysis, heavy mineral separation; construction of lithologs; geophysical exploration methods, remote sensing data.

Intellectual property rights, patents, copyright and related rights; ethics-plagiarism and integrity.

SECTION B. GEOLOGY COURSES

2. Physical Geology and Geomorphology: Composition of the crust and Earth as a whole; basic concepts and significance of geomorphology; relationship between landforms and geomorphic processes- fluvial, aeolian, glacial, and marine; soils; geomorphology of India; applications of geomorphology; mountain building; volcanoes and earthquake; seismic belts of India.

3. Structural Geology and Tectonics: Classification of folds and faults; Mechanism of folding; concept of stress and strain and their geological significance; joints and unconformities. concept of plate tectonics; palaeomagnetism, polar wandering and reversal of Earth's magnetic field; sea-floor spreading, island arcs and mountain chains.

4. Stratigraphy and Palaeontology: Principles of stratigraphy, time scale and its divisions; stratigraphic classifications; stratigraphic nomenclature; stratigraphic correlation; facies concept in stratigraphy; marine transgression and regression; ice ages; broad stratigraphic subdivisions of India.

Research Entrance Test July 2018

Fossil and modes of fossilization; application of fossils in age determination; evolutionary trends and geologic distribution of Brachiopoda, Pelecypoda, Gastropoda, Cephalopoda, Trilobita, Echinoids, Graptolites and Corals; elementary idea about the origin of major groups of vertebrates; evolutionary history of Horse, Elephant and Man; plant life through geologic ages.

5. Mineralogy: Physical and optical properties of minerals; classification of minerals; mineralogy of silicates, polymorphism, isomorphism and pseudomorphism; solid solution and exsolution; X-ray crystallography; concept of symmetry; crystallographic classification.

6. Petrology: Generation and evolution of magma; Bowen's reaction series; textures and classification of igneous rocks; phase equilibria: single, binary and ternary systems; silicate systems; genesis and tectonic setting of different magma types; cooling and crystallisation of magma.

Sedimentation, lithification and diagenesis; structures and textures; classification of sedimentary rocks; depositional environments; sedimentation and tectonics; heavy minerals and their applications in provenance studies.

Metamorphism and metamorphic processes; metamorphic differentiation; metamorphic facies; types of metamorphism and metamorphic rocks; metasomatism and anatexis.

7. Georesources and Economic Geology: Ore genesis; ore localisation and ore shoots; ore dressing and beneficiation; strategic, critical and essential minerals; national mineral policy; economic minerals of India; fossil fuels.

8. Geochemistry: Cosmic abundances of elements; geochemical classification and differentiation of the elements; trace element geochemistry; radiogenic and non-radiogenic isotopes; concept of geochemical and biogeochemical cycles and global climates.

9. Applied Geology:

Engineering Geology: Engineering properties of rocks; geological investigations, seismic parameters and remedial measures related to the construction of dams, bridges, highways and tunnels; mass movements with special emphasis on landslides and causes of hill slope instability.

Mineral Exploration: Principles and methodology of geological prospecting for economic minerals and rocks; sampling methods, methods for estimating reserve and resources, grade and tonnage calculation of the deposits; pathfinder elements; geochemical and geophysical methods; mining in India.

Hydrogeology: Hydrological cycle; hydrological properties of rock; distribution of surface and groundwater in the Earth's crust; global water budget; movement of groundwater; aquifers classification and characteristics; Darcy's law; Theis equation; water table; flow nets; groundwater provinces of India; groundwater quality and pollution; groundwater prospecting; desalination; springs and its types.

Environmental Geology: Environment and energy; non-conventional energy resources; geoenvironment; environmental hazards, instrumentation and analysis; disposal of municipal, domestic, hospital, solid and nuclear wastes; oil spills; environmental impact assessment (EIA); environmental legislation: national/international standards; application of remote sensing and GIS in environmental management.

Research Entrance Test July 2018

Remote Sensing and GIS: Electromagnetic radiation; aerial photographs and their geometry; elements of photo and image interpretation; satellite remote sensing; global and Indian space missions, sensor and their characteristics; digital image processing techniques; geological applications of remote sensing, GIS and GPS.

10. Ih,p -Mh (हिंदी) की प्रवेश परीक्षा के लिए

1. शोध प्राविधि - शोध का उद्देशीय और आलोचना शोध के विविध प्रविधियों
2. हिंदी साहित्य का इतिहास परिस्थितियों प्रवित्तियों एवं प्रमुख सहतियकार
3. आदिकालीन एवं मढ़ियाकलिन कविता
4. आधुनिक हिंदी कविता (छायावाद, प्रगतिवाद , प्रयोगवाद)
5. नाटक एवं अन्य x| विधायें (स्कंदगुप्त - जयशंकर प्रसाद, आधे - अधूरे -मोहन राकेश, अतीत के चलचित्र - महादेवी वर्मा, किन्नर देश के ओर- राहुल सांकृत्यायन , अदम्य जीवन - रांगेय राघव, अशोक के फूल और अन्य निबंध - हज़ारी प्रसाद दिव्वेदी, जूठन - ओमप्रकाश वाल्मीकि)
6. हिंदी उपन्यास (गोदान , बाणभट्ट के आत्मकथा , मैला आँचल, महाभोज), हिंदी कहानी (प्रेमचंद के कहानियाँ, मानसरोवर खंड - 1)
7. भाषा विज्ञान और हिंदी भाषा
8. साहित्य सिद्धांत और समालोचन (dkO; लक्षण, dkO; प्रयोजन , dkO; हेतु , रस सिद्धांत, साधारीकरण
प्लेटो , अरस्तु , yktkbul,, क्रोचे , टी . एस . इलियट , आई . ऐ . fjpMZI, नई समीक्षा, मनोविश्लेषणवादी आलोचना , ekDIZoknh आलोचना, अस्तित्ववाद, आधुनिकतावाद , उत्तर आधुनिकता , दलित साहित्य और चिंतन (डॉ. आंबेडकर , ज्योतिबा फुले), अस्मितामूलक विमर्श.

11. PHD PROGRAMME IN HISTORY (PHDHIS)

The syllabus for Entrance Test of Ph.D. History would be as below:

The question paper will have two equal parts.

Research Entrance Test July 2018

- i) The first part will cover Research Methodology and Historiography. This part will contain questions relating to Sources, Research methods and Writings in History.
- ii) The second part will cover Indian History. This part will contain questions relating to the themes pertaining to Ancient, Medieval and Modern periods of Indian History.

Both the parts will have in built choices to provide scope to students coming from various specializations. The students would be asked to give descriptive answers. The question paper will be of 3 hours duration.

12. .PHD PROGRAMME IN LIBRARY & INFORMATION SCIENCE(PHDLIS)

1. Information, Communication and Society
 2. Information Sources, Systems and Services
 3. Information Processing and Retrieval
 4. ICT Applications in LIS
 5. Recent Trends in LIS
 6. Management of Libraries and Information Centres
 7. Research Methodology
-

13. PHD PROGRAMME IN MANAGEMENT (PHDMGMT)

Research Methodology

1. Foundations of Research: Meaning, Objectives, Motivation, Utility. Concept of theory, empiricism, deductive and inductive theory. Characteristics of scientific method – Understanding the language of research – Concept, Construct, Definition, Variable. Research Process
2. .Problem Identification & Formulation – Research Question – Investigation Question – Measurement Issues – Hypothesis – Qualities of a good Hypothesis –Null Hypothesis & Alternative Hypothesis. Hypothesis Testing – Logic & Importance
3. Research Design: Concept and Importance in Research – Features of a good research design – Exploratory Research Design – concept, types and uses, Descriptive Research Designs – concept, types and uses. Experimental Design: Concept of Independent & Dependent variables
4. Qualitative and Quantitative Research: Qualitative research – Quantitative research – Concept of measurement, causality, generalization, replication. Merging the two approaches.

Research Entrance Test July 2018

5. Measurement: Concept of measurement– what is measured? Problems in measurement in research – Validity and Reliability. Levels of measurement – Nominal, Ordinal, Interval, Ratio.
6. Sampling: Concepts of Statistical Population, Sample, Sampling Frame, Sampling Error, Sample Size, Non Response. Characteristics of a good sample. Probability Sample – Simple Random Sample, Systematic Sample, Stratified Random Sample & Multi-stage sampling. Determining size of the sample – Practical considerations in sampling and sample size.
7. Data Analysis: Data Preparation – Univariate analysis (frequency tables, bar charts, pie charts, percentages), Bivariate analysis – Cross tabulations and Chi-square test including testing hypothesis of association.
8. Interpretation of Data and Paper Writing – Layout of a Research Paper, Journals in Computer Science, Impact factor of Journals, When and where to publish ? Ethical issues related to publishing, Plagiarism and Self-Plagiarism.
9. Use of Encyclopedias, Research Guides, Handbook etc., Academic Databases for Computer Science Discipline.
10. Use of tools / techniques for Research: methods to search required information effectively, Reference Management Software like Zotero/Mendeley, Software for paper formatting like LaTeX/MS Office, Software for detection of Plagiarism

Management (Financial Management, Human Resource Management, Marketing Management, Operations Management and General Management)

I

- Managerial Economics – Demand Analysis
- Production Function
- Cost – Output Relations
- Market Structures
- Pricing Theories
- Advertising
- Macro – Economics
- National Income Concepts
- Infrastructure – Management and Policy
- Business Environment
- Capital Budgeting

II

- The concept and significance of organisational behaviour – Skills and Roles in an organisation – Classical, Neo – Classical and Modern Theories of Organisational Structure – Organisational Design – Understanding and Managing individual behaviour personality – Perception – Values – Attitudes – Learning – Motivation.
- Understanding and Managing Group Behaviour, Processes – Inter – personal and group dynamics – Communication – Leadership – Managing change – Managing conflicts.
- Organisational Development.

III

Research Entrance Test July 2018

- Concepts and perspectives in HRM; HRM in changing environment.
- Human Resource Planning – Objectives, Process and Techniques.
- Job analysis – Job Description.
- Selecting Human Resources.
- Induction, Training and Development.
- Exit policy and Implications.
- Performance Appraisal and Evaluation.
- Potential Assessment.
- Job Evaluation.
- Wage Determination.
- Industrial Relations and Trade Unions.
- Dispute Resolution and Grievance Management.
- Labour Welfare and Social Security Measures.

IV

- Financial Management – Nature and Scope.
- Valuation Concepts and Valuation of Securities.
- Capital Budgeting Decisions – Risk Analysis.
- Capital Structure and Cost of Capital.
- Dividend Policy – Determinants.
- Long – Term and Short – Term Financing Instruments.
- Mergers and Acquisitions.

V

- Marketing Environment and Environment Scanning; Marketing Information Systems and Marketing Research; Understanding Consumer and Industrial Markets; Demand Measurement and Forecasting; Market Segmentation – Targeting and Positioning; Product Decisions, Product mix, Product Life Cycle; New Product Development; Branding and Packaging; Pricing Methods and Strategies.
- Promotion Decisions – Promotion mix; Advertising; Personal Selling; Channel Management; Vertical Marketing Systems; Evaluation and Control of Marketing Effort; Marketing of Services; Customer Relation Management;
- Uses of Internet as a Marketing Medium – Other related issues like branding, market development, Advertising and retailing on the net.
- New issues in Marketing.

VI

- Role and Scope of Production Management; Facility Location; Layout Planning and Analysis; Production Planning and Control – Production Process Analysis; Demand Forecasting for Operations; Determinants of Product mix; Production Scheduling; Work measurement; Time and Motion Study; Statistical Quality Control. Supply Chain Management and Materials Management

Research Entrance Test July 2018

- Role and Scope of Operations Research; Linear Programming; Sensitivity Analysis; Duality; Transportation Model; Inventory Control; Queueing Theory; Decision Theory; Markov Analysis; PERT / CPM.

VII

- Probability Theory; Probability distributions – Binomial, Poisson, Normal and Exponential; Correlation and Regression analysis; Sampling theory; Sampling distributions; Tests of Hypothesis; Large and small samples; t z, F, Chi – square tests.
- Use of Computers in Managerial applications; Technology issues and Data processing in organizations; Information systems; MIS and Decision making; System analysis and design; Trends in Information Technology; Internet and Internet – based applications.

VIII

- Concept of Corporate Strategy; Components of Strategy Formulation; Ansoffs Growth Vector; BCG Model; Porter's Generic Strategies; Competitor Analysis; Strategic Dimensions and Group Mapping; Industry Analysis; Strategies in Industry Evolution, Fragmentation, Maturity, and decline.
- Competitive strategy and Corporate Strategy; Transnationalization of World Economy; Managing Cultural Diversity; Global Entry Strategies; Globalisation of Financial System and Services; Managing International Business; Competitive Advantage of Nations; RTP and WTO.

IX

- Concepts – Types, Characteristics; Motivation; Competencies and its development; Innovation and Entrepreneurship; Small business – Concepts Government policy for promotion of small and tiny enterprises; Process of Business Opportunity Identification;
- Detailed business plan preparation; Managing small enterprises; Planning for growth; Sickness in Small Enterprises; Rehabilitation of Sick Enterprises; Intrapreneurship (Organisational Entrepreneurship).

X

- Ethics and Management System; Ethical issues and Analysis in Management; Value based organisations; Personal framework for ethical choices;
 - Ethical pressure on individual in organisations; Gender issues; Ecological consciousness; Environmental ethics; Social responsibilities of business; Corporate governance and ethics.
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14. PHD Programme IN NURSING (PHDNS)

Research Entrance Test July 2018

The syllabus is based on MSc Nursing Curriculum and the broad areas are as follows including weightage for each area

Research methodology.	50%
Nursing Education.	20%
Nursing Administration.	20%
Speciality area	10%
Total	100

15. PHD PROGRAMME IN POLITICAL SCIENCE(PHDPS)

Syllabus for Research Degree Entrance Examination (MPhil/Ph.D in Political Science) 2018

I Research Methodology

Methodology/Framework: Systems, Marxian and Post-Modern approaches, Inter-Disciplinary approach
Research Methods: Research Design-Research Proposal, Review of Literature, Hypothesis/Research Questions, Analysis and Interpretation of Data.

II. Political Theory & Thought

Introduction to Political Theory: Meaning, nature and scope of political theory, Approaches- Normative, Historical and Empirical, Perspectives- Feminist and Post-modern
Concepts: Liberty, Equality and Justice, Citizenship, Civil Society
Indian and Western Political Thought: Thinkers and Themes
Contemporary Debates: Human Rights, Multiculturalism, Environment & Sustainable Development

III. India: State and Society

Introduction: State, Society and Politics Interface (Conceptual and Theoretical Aspects)
Working of the Indian Constitution
Indian State: India's Political Economy, Nature of the Indian State, Models of Development, Development in India- Regional Variations
Social Movements: Identity-Based Movements: Caste, Religion, Gender, Tribe, Region, Class
Movements: Farmers and Working Classes
Democracy in India: Electoral Democracy (Methodology, Issues and Debates)

IV. Globalization and International Relations

Major theories of IR
International Peace and Cooperation: National Sovereignty and Humanitarian Intervention, Human Security and Human Development Agenda, Environment and Sustainability
India in the Emerging World Order: India's Neighborhood, India and Great Powers, India and the Developing World
International Political Economy: Trade and Finance, Globalization: Mechanisms and Forums
International Institutions, Regimes and Orders: International Governance-Issues and Mechanisms, Regional Economic Groupings
International Civil Society and Non-State Actors in IR

Research Entrance Test July 2018

16 .PH D PROGRAMME IN PUBLIC ADMINISTRATION (PHDPA)

Note: The question paper shall consist of Sections-I & II carrying a total of 100 marks.

Section I shall consist of 40 Objective Questions (20 Questions each from Subject and Research Methodology) carrying 2 marks each.(80 Marks)

Section II shall consist of Descriptive/Essay Category of Two Questions (One each from Subject and Research Methodology). Each Question carries 10 Marks, (20 Marks)

SECTION-I (Public Administration)

- Public Administration—Meaning, Nature and Scope, Changing Complexion of Public Administration, New Public Administration, New Public Management, New Public Service, Governance, Civil Society
- Administrative Thinkers—Kautilya, Woodrow Wilson, Luther Gullick and Lyndall Urwick, Max Weber, F.W. Taylor, Henry Fayol, M.P. Follet, Elton Mayo, Chester Barnard, Herbert Simon, D.H. McGregor, Abraham Maslow, Frederick Herzberg and Chirs Argyris.
- Indian Administration—Organisation of the Union Government—Central Secretariat, Ministries and Departments, Cabinet Secretariat, Prime Minister’s Office.
- Organisation of the State Government—Secretariat, Role of Chief Secretary, Organisaton of Departments and Directorates.
- Personnel Administration— Bureaucracy, Classification of Services, Recruitment, Recruitment Agencies—Union Public Service Commission, State Public Service Commission, Training, Promotion, Performance Appraisal, Discipline, Morale, Staff Associations, Employer-Employee Relations.
- Financial Administration---Budget, Types of Budget, Enactment and Execution of Budget, Parliamentary Committees, Parliamentary Control over Public Expenditure
- Local Self-government—, Nature and Scope, 73rd and 74th Constitutional Amendments in India, Urban and Rural local bodies-Organisation and Functions, Finance, Committee System, State and Local Government Relations and Challenges of Local Self-Government.
- Disaster Management, Sustainable Development, Social Audit, Corporate Governance, Corporate Social Responsibility, and Contemporary Issues in Governance.

Section II Research Methodolgy

- Meaning, Objectives and Types of Research
- Research Ethics
- Research Methods versus Research Methodology

Research Entrance Test July 2018

- Research Methods in Social Sciences
 - Research Design
 - Hypotheses
 - Methods of Data Collection
 - Sampling Design
 - Data Processing and Analysis
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17. .PH. D PROGRAMNME IN PSYCHOLOGY (PHDPC)

The syllabus for the entrance examination for Ph. D in Psychology covers the topics primarily taught at the Masters level in psychology.

Research Methodology (50%)

Introduction to research in psychology, definition, constructs and variables, steps in psychological research, problem and hypothesis, type 1 and type 2 errors; Types of research: experimental, non experimental, field experiments, field studies, survey research; Research designs; Methods of data collection including interview, observation, objective tests, questionnaire; Test Construction; Reliability and validity; Sampling and sampling techniques; Qualitative and quantitative approach to research; Methods of data collection in qualitative research; Ethics in research; Psychological statistics, levels of measurement, descriptive and inferential statistics, measures of central tendency and measures of variability; Correlation and Regression; Parametric and nonparametric statistics and their various techniques for statistical analysis; Normal Distribution Curve.

Specialisation (50%)

A: Industrial and Organisational Psychology

Introduction to industrial and organisational psychology; Human resource management and human resource development; Recruitment and Selection; Training and training methods;

Research Entrance Test July 2018

Performance appraisal; Leadership; Diversity and diversity management; Accidents and Industrial safety; Workplace behaviour and ethical issues; Workplace violence and harassment; Conflict and conflict management; Motivation and theories of motivation; Personality and Attitude in the context of organization; Job Satisfaction; Team, team work and team building; Organisational Behaviour and Organisational development, Organisational Change, Organisational culture and climate; Management by objectives; Organisational citizenship behaviour; Corporate social responsibility; Stress and Stress management.

OR

B: Counselling Psychology

Introduction to counselling, guidance and psychotherapy; Career counselling and guidance; Stages of counselling and counselling relationship; Counselling with regard to various developmental stages; Counselling for persons with HIV/ AIDS, Cancer and other terminal illnesses; Assessment in Counselling; School counselling
Multicultural counselling; Learning Disability; Behavioural problems of children; Eating Disorders; Substance use disorder; Anxiety Disorder; Art, Drama and Play therapy; Psychotherapies; Family counselling; Ethics in Counselling

OR

C: Clinical Psychology

Concept of Abnormality, paradigms and perspectives of psychopathology; Personality and Personality disorders; Schizophrenia; Mood disorders; Eating Disorders; Anxiety and Anxiety Disorders; Psychosomatic disorders; Substance use disorder; Prevention of mental disorders; Diagnosis and tools for diagnosis including case history, Mental Status Examination, intelligence assessment, personality assessment, DSM V; Introduction to Psychotherapy, Psychoanalysis, Behaviour therapy, Humanistic and Existential therapy, Person centered therapy, Gestalt therapy, Cognitive therapy, Cognitive Behaviour therapy; Psychotherapeutic relation; Play therapy, Narrative therapy; Art therapy; Family therapy; Ethical issues.

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18. PHD PROGRAMME IN SOCIAL WORK (PHDSW)

Syllabus for Entrance Examination for Admission of M.Phil./Ph.D. in Social Work

Part –A: Research Methodology

Research Entrance Test July 2018

- Basics of research in social work
- Research methods in social work
- Tools and methods of data collection
- Data processing and analysis

Part –B: Social Work

- Origin and Development of Social Work
- Professional Social Work: Indian Perspectives
- Basic Social Science Concepts
- Social Work and Social Development
- Social Work Practicum and Supervision
- Social Work Research
- Social Work Practicum
- Case Work and Counseling: Working with Individuals
- Social Group Work: Working with Groups
- Community Organization Management for Community Development

Question Paper Pattern

1. The entrance examination is based on MA in Social Work or MSW syllabus.
2. Maximum Marks : 100
3. Time Allowed : 3 hours
4. The question paper comprises of essay type questions including long answers and short answer questions.
5. Question paper will be divided into 2 parts comprising of 50 marks each.
6. Part- A will be focused on Research Methodology whereas Part-B will be pertaining to Core Social Work discipline.
7. Candidates will be asked to attempt all the questions.

19. M PHIL/ PHD PROGRAMME IN SOCIOLOGY

Section - A

1. **Research Methodology**
 - Logic of enquiry in social research
 - Logic of Theory Building
 - Issues of epistemology
 - Positivism and its critique
 - Comparative Method
 - Feminist Method
 - Participatory Method

Research Entrance Test July 2018

2. Research Methods and Research Design

- Types of Research
- Methods of Research
- Research Design
- Techniques of Data Collections: Sampling, Interview, Case Study, Life History, Observation, Hypothesis, Correlation and Regression

Section - B

- Sociological concepts: social groups, social structure, community, association, culture, identity, tradition, modernity, social processes, social Institutions- family, marriage, kinship, state, religion
- Sociological Theories: Evolutionary- Functional, Marxian, Structural-Functional, Structural, Symbolic Interactionism, Phenomenology, Post-Modernism
- Social stratification-castes, class, race, gender, ethnicity
- Types of societies: colonial, post colonial, simple, agrarian, Industrial, post industrial, knowledge society
- Social change: Theories of social change, social transformation, social movements, social development

20. PH.D. PROGRAMME IN STATISTICS(PHDSTAT)

Part-A: Research Methodology

Meaning of research, Role of research in important areas, Process of research, Types of research, research approach, Significance of research, Research problem: Definition, Selection and necessity of research problem.

Primary and secondary data, Qualitative and quantitative data, Classification of measurement scales, Goodness of measurement scales, Scaling, Scale classification bases, Scaling techniques, Methods of collecting primary data, Merits and demerits of different methods of collecting primary data, Non response, Classification and tabulation of data.

Introduction to sampling, Advantages of sampling over complete enumeration, Probability and non-probability sampling, Sampling and non-sampling errors, Basic concepts of simple random sampling and design of experiments.

Measures of central tendency, Measures of dispersion, Probability distributions (Binomial, Poisson, Normal), Simple correlation and regression, Multiple and partial correlation., Testing of hypothesis (z, t, F and chi-square tests).

Research Entrance Test July 2018

Part-B: Statistics

Sample space, Probability, Conditional probability, Independent events, Bayes theorem, Random variables, Distribution functions (Univariate and Bi-variate), Moments and moment generating function, Independent random variables, Marginal and conditional distributions, Characteristic function, Central limit theorem (i.i.d. case).

Standard discrete (Rectangular, Geometric, Negative binomial, Hyper-geometric) and continuous distributions (Uniform, Exponential, Beta, Gamma), Bivariate normal distribution, Sampling distributions (t, F, z, chi-square).

Properties of good estimators (unbiasedness, Consistency, Efficiency, Sufficiency, Complete and minimal Sufficient statistic), Exponential families, Methods of estimation (least square, maximum likelihood, method of moments, minimum chi-square), Mean square error, Minimum variance unbiased estimators, Rao-Blackwell theorem, Lehmann-Scheffe theorem, Cramer-Rao lower bound,

Basics of testing of hypothesis, Neyman-Pearson lemma, Most powerful and uniformly most powerful tests, Likelihood ratio tests, Unbiased test, Non-parametric tests for one or more samples problems (Sign, Wilcoxon, Mann-Whitney, Kolmogorov Smirnov, Run , Kruskal Wallies test).

Gauss-Markov theorem, Estimability of parameters in linear models, BLUE.

Markov chains with finite and countable state space, Classification of states, Limiting behavior of n-step transition probabilities, Stationary distribution, Poisson process, Birth-and-death process.

Multivariate normal and its properties, Distribution of quadratic forms, Canonical correlation, Principle components analysis, Factor analysis, Classification and discriminant analysis.

Stratified sampling, Systematic sampling, Probability proportional to size sampling, Ratio, regression and product methods of estimation, Cluster sampling, Multi stage sampling, Two-phase sampling, Successive sampling

Analysis of variance and covariance, Completely randomised designs, Randomised block designs, Latin-square designs, Missing plot techniques, Orthogonality, BIBD, 2^k factorial experiments, Confounding.

Linear programming problem, Simplex methods, Duality, Assignment, Transportation problems, Queuing theory, Steady-state solutions of Markovian queuing models: M/M/1, M/M/1 with limited waiting space, M/M/C, M/M/C with limited waiting space. Elementary inventory models.

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21.M.Phil./Ph.D. Programme in Translation Studies (PHDTT)

- **Research Methodology**
 - Definition of Research
 - Objectives of Research
 - Types of Research
 - Significance of Research
 - Preparing Research proposal on a topic relating to Translation Studies
 - Research Approaches
 - Stages of writing Dissertation/Thesis
 - Using Library resources
 - Style sheet
 - Research Ethics
- **Translation Studies**
 - Meaning, Nature and Scope of Translation
 - Role of Translation in Dissemination of Knowledge
 - Translation Studies in 21st Century as a Discipline
 - Future of Translation
 - Loss & Gain in Translation
 - Problem of Untranslatability
 - Translation and Indian Multilingualism
 - Translation from Hindi to English and *vice-versa* i.e. English to Hindi

Design of Question Paper

1. Question paper will be divided into 2 parts comprising of 50 marks each.
2. Part I will be focused on Research Methodology whereas Part II will be pertaining to Translation Studies. Candidates will be asked to attempt all the questions. Part I will consist 2 questions of 20 marks each and the 3rd question will be focused on a short note of 10 marks. All the Questions will have internal choice.
3. In Part II there shall be one question of 20 marks with an internal choice and the other one will be a short note of 10 marks with an internal choice.

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4. Students will be required to translate from English to Hindi and *vice-versa* one passage comprising 10 marks each. Internal choice will be given for translating passages.
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22 .PH.D PROGRAMME IN WOMEN’S STUDIES (PHDWS)

Part 1 – Discipline Related Unit – I

- Concept and need for Women’s Studies – Scope of Women’s Studies – Women’s Studies as an academic discipline.
- Women’s Movements – Pre-independent, Post-independent and women’s movements in contemporary India.
- National Committees and Commissions for Women – Government. Organizations for Women – Department of Women and Child Development.

Unit – II

- Liberal Feminism – Rationality, Freedom, Education.
- Marxist Feminism – Production, Reproduction, Class, Alienation, Marriage and Family.
- Radical Feminism – Gender, Patriarchy, Reproductive Technology, Motherhood.
- Socialist Feminism – Class and Gender, Division of Labour, Unified and Dual System, Exploitation.
- Indian Women – Family, Caste, Class, Culture, Religion, Social System.

Unit – III

- Women’s Education – Gender bias in enrolment – Curriculum content – Dropouts.
- Recent Trends in Women’s Education – Committees and Commissions on Education.

Unit – IV

- Concept of Work – Productive and non – productive work – Use value and market value.
- Gender Division of Labour – Mode of Production – Women in organised and unorganised sector.
- New Economic Policy and its impact on Women’s Employment – Globalization – Structural Adjustment Programs.

Unit – VI

- Gender in Health – Health status of women in India – Mortality and Morbidity factors influencing health – Nutrition and health – HIV and AIDS control programme.
- National Health and Population Policies and Programmes – Maternal and Child Health (MCH) to Reproductive and Child health approaches, Issues of old age.

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- Women and Environment – Nature as feminine principle – Basic needs in Rural and Urban Environments – Care and management of natural resources – Depletion of natural resources – Sustainable environment and impact on women.

Unit – VII

- Girl Child in Society – Child labourers – Changing role of women – Marriage – Single parent – Motherhood – Widows.
- Theories of Development – Empowerment – Alternative approaches – Women in Development (WID), Women and Development (WAD) and Gender and Development (GAD) – State Policy and Programmes.
- Women Development approaches in Indian Five – Year Plans – Collectivity and Group dynamics – Self – help Groups women and leadership – Panchayati Raj – Political Role and Participation – NGOs and Women Development – National and International Funding Agencies.

Unit – VIII

- Indian Constitution and provisions relating to women.
- Personal laws – Labour Laws – Violence against, women – Legal protection – Family Courts – Enforcement machinery – Police and Judiciary.
- Human Rights as Women’s Rights.
- Women in Conflict Zone

Unit – IX

- Portrayal of women in Mass Media (Cinema, TV Print media).
- Role of women in media – Development of Communication Skills – Alternative Media – Folk Art, Street Play and Theatre – Women as change agents.
- Indecent Representation of Women (Prohibition) act, 1986 – Impact of media on women.

Part-2 -- Research Methodology

- **Unit I :**
 - Limitations of methodology of social science, Research for women’s studies, Scope and significance of research in women’s studies.
 - Scientific methods and its Critique
- Research Design and Its Various Types – Survey – Exploratory – Diagnostic, Experimental, Action Research, Historical Research, Case Study, Ethnography
- Sexism in Research
- Feminist Epistemology
- **Unit II :** Qualitative verses Quantitative Research
- Concepts in Qualitative and Quantitative Research
- Data Collection tools

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- Sampling
- Data Analysis in Qualitative and Quantitative Research
- Representation in Feminist Research

Unit III

- Designing a research proposal
 - Preparing and presenting research reports
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