



RAKSHA SHAKTI UNIVERSITY

Institute of Research & Development

Ph.D. Programme

Academic Year 2019-20

(as per UGC RSU PhD Regulation – 2018)

Subject wise number of seats for Ph.D. Programme 2019-20

Sr.	Subjects	Seats
1	IT/Cyber Security/Computer Engineering/ IT Engineering	02
2	Criminology	01
3	Law	01

Reservation of Seats in PhD: As per University/Govt. of Gujarat Norms

Address

The Registrar, Raksha Shakti University,

At: Lavad, Ta: Dahegam, Dist: Gandhinagar, Gujarat.

Tel. No. - 079-22684222, Fax No. - 079-22683762

For Application forms and other details visit the website: www.rsu.ac.in

Date and Time of Entrance Tests and Interview for eligible candidates:

It will be notified very soon

PhD Fees Structure

RSU fees structure is uploaded on the website RSU-PhD Regulation 2018, candidates can check the regulations as well as can see the fees structure also.

Eligibility:

- (a) Masters Degree {minimum 55% marks at PG level for unreserved categories and 50% marks for SC/ST/OBC(Non Creamy Layer)/PH candidates} in the relevant subjects from an UGC recognized University/Institution

Entrance Examination for Ph.D.

(A) Timing of the Entrance Exam: It will be notified very soon

09.30 am	Reporting Time
10.30 am to 11.30 am	Written Examination Paper I (Research Methodology)
11.30 am to 12.30 pm	Written Examination Paper II (Subject wise)
02:30 pm	Display of list of Ph.D. applicants qualified for P.I.
02:45 pm	Document Checking of qualified applicants for P.I. (10 th Mark sheet, Master's Degree last semester Mark sheet, M. Phil. last semester Mark sheet, UGC/CSIR – JRF/NET/SET/SLET/GATE Certificate, Caste Certificate for Reservation Category, Certificates of Paper Presented in National/ International Conference/Seminar and Research Publications in Referred Journals – bring original journals)
03:00 pm to 06:00 pm	Personal Interview

(B) Examination Paper Pattern

Paper I – Research Methodology - 50 Marks

- Multiple Choice Questions – (1 Mark each * 30 MCQ), No Negative Marking
- Descriptive Questions (10 Marks * 2 Questions)

Paper II – Subject Wise – 50 Marks

- Multiple Choice Questions – (1 Mark each * 30 MCQ), No Negative Marking
- Descriptive Questions (10 Marks * 2 Questions)

(C) Minimum Passing Marks:

Individual Papers	Aggregate
40% (20 Marks in Each Paper for open Category)	50% for Open Category
35% (17.5 Marks in Each Paper for SC/ST Category)	45% for SC/ST Category

(D) Candidates who will clear written examination will be eligible for Personal Interview

(E) Personal Interview: In P.I. the areas to be judged are Domain knowledge, Research Aptitude, Competence of the candidate for the proposed research, suitability of research work at RSU, and Contribution of proposed research to new/additional knowledge.

Sr. No.	Description	Max. Marks
1	Domain Knowledge	06
2	Research Aptitude	06
3	Competence of the candidate for the proposed research	06
4	Suitability of Research work at RSU	06
5	Contribution of proposed research to new/additional knowledge.	06
	Total	30

(F) The Final merit list shall be based on following Criteria:

Candidates who have passed UGC-NET (including JRF)/UGC-CSIR NET (including JRF)/SLET/GATE/teacher fellowship holder or have passed M.Phil. shall have to appear in the Entrance Written Test. However, they shall be provided additional marks as mentioned below at the time of preparing final merit list.

The Final merit list shall be based on following Criteria:

1. Written Exam – 70 Marks
2. Interview – 30 Marks
3. Additional Marks - Subject to Maximum of 10 marks

Sr. No.	Description	Marks
01	UGC-NET/ UGC-CSIR NET / SLET or GATE with 60 Marks	05
02	UGC-NET/ UGC-CSIR NET with JRF or teacher fellowship holder	08
03	MPhil	10

(G) Subject wise Merit List will be prepared and admission will be given on merit basis only.

Syllabus of the Entrance Exam

Paper I – Research Methodology

Research: Nature and Definition

Research: Nature, Definition and Purposes; Scientific attitudes theory formation: Inductive, Deductive-Reasoning; Types of research studies: Descriptive, Analytical, Exploratory and Doctrinal; Quantitative vs Qualitative Research; Basics of Qualitative Research – Ethnography/Observation, Oral History and Grounded Theory; Mixed Methods.

Steps in Research

Sources of Research Problems; Primary and Secondary - Independent and Dependent variables; Main steps in Social Research types: Formulation of research problem, selecting of problem, study area, etc; Review of Literature; Sample collection; Data Analysis and Report Writing.

Hypothesis and Sampling

Hypothesis: Definition, types and sources; Research Design: Meaning and types; Reliability and validity; Sampling: Non Probability and Probability types; Methods of data collection: Pilot study, observation, Questionnaire, Interviewing, Case study method; Unobtrusive measures, Secondary data collection, Uses of Official Statistics.

Data Analysis

Types of data: qualitative and quantitative; Analysis and interpretation of data, Data processing; Content analysis; Survey method measurement and types of scales. Analysis and interpretation of data; Report writing; Ethics in Research: Researcher Fraud and Plagiarism, Confidentiality in Research, Avoiding Ethical problems.

Basic Statistics

Statistics-Meaning and significance - Classification of Tabulation, Diagrammatic, and graphic representation of data; Measures of central tendency-mean, median and mode; Measures of dispersion-range, mean, quartile and standard deviation; Concept of Statistical inference, test of significance; Analysis of variance; Multivariate analysis - Multiple correlation, meta analysis, content analysis; Chi-square Test, T-Test and Regression analysis; Use of SPSS for Data Analysis.

Paper II – Subject Wise

Criminology

Unit – I

Definition and Scope, Criminology and other Social Sciences; Legal, Social and Psychological Aspects of Crime; Traditional Crimes: Crimes against Property and Person; Modern Crimes: Organized Crimes, Socio – Economic Crimes, Corruption, Cyber Crimes, Environmental Crimes, Terrorism and Insurgency; Crime and Politics.

Unit – II

Criminological thought in Ancient India and Abroad; Classical School and Neoclassical School; Positive School; Cartographic School; Sociological Theories – Social Structural Theories and Social Process Theories; Economic Theories of Crime; Critical Criminology / Radical Criminology / Labelling perspective.

Unit – III

Constitutional Theories: Body Types, Hereditary Traits, Endocrine Glands; Behaviorist Theories: Drives, Motives, Attitudes, Frustrations; Psycho-analytical Theories; Psychopathic Personality; Mental Health and Criminal Liability; Application of Psychology in Police, Courts and Corrections. Modern Theories: Routine Activities Theory, Broken Windows Theory, and Space Transition Theory.

Unit – IV

Criminological Research: Importance and Types; Research Questions and Hypotheses; Research Design; Sampling, Data Collection, Data Analysis, Interpretation and Report Writing; Statistical Application in Criminological Research; Sources of Crime Statistics in India and Crime Trends.

Unit – V

Social Change, Social Disorganization and Social Problems; Victimless Crimes: Alcoholism, Drug Addiction, Beggary, Commercial Sex, Suicide; Family centered Crimes : Dowry, Domestic Violence, Child Abuse; Community Problems : Inter – religion and Inter – caste tensions and conflicts.

Unit – VI

Juvenile Delinquency: Concept and Causes; Pre – delinquency stages: Truancy and Vagrancy; U.N. Standard Minimum Rules for Juvenile Justice (Beijing Rules); Main Features of Juvenile Justice Act; Institutional Services: Observation Homes, Juvenile Homes, Special Homes, and ‘fit’ Institutions; Juvenile Aftercare Services.

Unit – VII

History and Theories of Punishment: Historical Development from Punishment to Correction and Reformation, Prison Reform since Independence; Types of Punishment – Simple and rigorous imprisonment – Capital Punishment – Views of Abolitionists and Retentionists; Current problems and challenges in Prison Administration; Indeterminate and Determinate sentence.

Unit – VIII

Prison System in India; Correctional Programs in Jails; Aftercare Services for Adult and Juvenile Offenders; Probation, Parole – Concept and Historical Development, Probation under Different Laws.

Unit – IX

Legal Approaches : Accusatorial and Inquisitorial; Substantive and Procedural Laws – Criminal Liability, Strict Liability; Indian Penal Code – General Exceptions, Offences Against Property; Criminal Procedure Code ; Cognizable and Non – Cognizable offences, Bailable and Non – bailable, Compoundable and Non – compoundable offences; Investigation of Crimes; Complaint, F.I.R., Powers of Police Officers, Arrest, Search, Seizure, Police Custody, Judicial Remand and Bail; Types of Evidence, Admissibility of Confession, Dying declaration; Rights of accused, Rights of victims, Rights of women in custody, Rights of prisoners.

Unit – X

Victimology : Concept, Origin and Development, Need to Study Victims, Victim Typology, Role of Victim in Criminal Phenomenon – Victim Precipitation; U.N. Declaration on the Basic Principles of Justice for Victims of Crime and Abuse of Power; Victim’s Rights – Fair Access to Justice, Restitution, Compensation, and Assistance; Victim Compensation Schemes in India; Human Rights – Protection of Human Rights Act.

IT/Cyber Security/Computer Engineering/ IT Engineering

Unit 1: Digital Logic

Boolean algebra, Combinational and sequential circuits, Minimization, Number representations and computer arithmetic (fixed and floating point).

Unit 2: Computer Organization and Architecture

Machine instructions and addressing modes. ALU, data-path and control unit. Instruction pipelining. Memory hierarchy: cache, main memory and secondary storage; I/O interface (interrupt and DMA mode).

Unit 3: Programming and Data Structures

Programming in C. Recursion. Arrays, stacks, queues, linked lists, trees, binary search trees, binary heaps, graphs.

Unit 4: Algorithms

Searching, sorting, hashing. Asymptotic worst case time and space complexity. Algorithm design techniques: greedy, dynamic programming and divide-and-conquer. Graph search, minimum spanning trees, and shortest paths.

Section 5: Theory of Computation

Regular expressions and finite automata. Context-free grammars and push-down automata. Regular and context-free languages, pumping lemma. Turing machines and undecidability.

Unit 6: Operating System

Processes, threads, inter-process communication, concurrency and synchronization. Deadlock. CPU scheduling. Memory management and virtual memory. File systems.

Unit 7: Databases

ER-model. Relational model: relational algebra, tuple calculus, SQL. Integrity constraints, normal forms. File organization, indexing (e.g., B and B+ trees). Transactions and concurrency control.

Unit 8: Computer Networks

Concept of layering. LAN technologies (Ethernet). Flow and error control techniques, switching. IPv4/IPv6, routers and routing algorithms (distance vector, link state). TCP/UDP and sockets, congestion control. Application layer protocols (DNS, SMTP, POP, FTP, HTTP). Basics of Wi-Fi. Network security: authentication, basics of public key and private key cryptography, digital signatures and certificates, firewalls

Unit 9 Software Engineering

System Development Life Cycle (SDLC) : Steps, Water fall model, Prototypes, Spiral model.

Software Metrics: Software Project Management.

Software Design: System design, detailed design• function oriented design, object oriented design, user interface design. Design level metrics.

Coding and Testing: Testing level metrics. Software quality and reliability

Unit 10 Current Trends and Technologies

Data Warehousing: Data Warehouse environment, architecture of a data warehouse methodology, analysis, design, construction and administration.

Data Mining: Extracting models and patterns from large databases, data mining techniques, classification, regression, clustering, sequencing analysis

Law

Unit – I: Constitutional Law of India

- Fundamental Rights and Duties
- Directive Principles of State Policy
- Judiciary
- Emergency Provisions
- Amendment of the Constitution
- Essential Features of Indian Constitution

Unit – II: Legal Theory

- Nature and Sources of Law
- Positivism, Natural, Law Theory, Sociological Jurisprudence
- Theories of Punishment
- Rights and Duties

Unit – III: Law of Crimes

- General Principles of Criminal Law-meaning, nature, essentials and stages of offence
- General Exceptions
- Offences against Women
- Joint Liability; Abetment and Criminal Conspiracy
- Offences against Human Body
- Offences against Property
- Defamation

Unit – IV: Human Rights

- Concept and Development of Human Rights
- Contribution of United Nations in the development and implementation of Human Rights
- Implementation of Human Rights in India: Role of National Human Rights Commission.
- Protection of Marginalised Groups: Women, Children, Minorities and Refugees.

Unit – V: Criminal Procedure Code

- Criminology and Criminal Justice Administration
- Procedure for investigation search and seizer
- Summons and warrant
- Cognizable and non cognizable offences

Unit – VI: Indian Evidence Act

- Fact, fact in issue
- Kinds of evidence, admission and confession, dying declaration
- Kinds of examination