



# RAKSHA SHAKTI UNIVERSITY

## Institute of Research & Development

M.Phil. Programme

**Academic Year 2018-19**

**(as per UGC M.Phil Regulation – 2016)**

Subject wise number of seats for M.Phil Programme 2018-19

Sr.	Subjects	Seats
1	IT	04
2	Criminology	03
3	Forensic Science	01
4	Physical Education	01
5	Police Administration	02
6	Law	02

**Reservation of Seats in M.Phil:** As per University/Govt. of Gujarat Norms

### Address

The Registrar, Raksha Shakti University,  
New Mental Corner, Meghaninagar, Ahmedabad-16.

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

For Application forms and other details visit the website: [www.rsu.ac.in](http://www.rsu.ac.in)

Date and Time of Entrance Tests and Interview for eligible candidates: **20/07/2018 (Friday) at Raksha Shakti University, Ahmedabad**

### Eligibility:

- 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
- UGC/CSIR (JRF/NET) **OR** SET/SLET **OR** GATE

**M.Phil Entrance Test:** Candidates not having eligibility criteria (b) have to appear in the M.Phil Entrance Test of RSU

## Entrance Examination for M.Phil.

### (A) Timing of the Entrance Exam: 20/07/18

09.30 am	Reporting Time
10.00 am to 11.00 am	Written Examination Paper I (Research Methodology)
11.15 am to 12.15 pm	Written Examination Paper II (Subject wise)
02:30 pm	Display of list of M.Phil.applicants qualified for P.I.
02:45 pm	Document Checking of qualified applicants for P.I. (10 <sup>th</sup> Mark sheet, Master's Degree 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/ Workshop/Training Programme 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 \* 40 MCQ), No Negative Marking
- Descriptive Questions (05 Marks \* 2 Questions)

#### Paper II – Subject Wise – 50 Marks

- Multiple Choice Questions – (1 Mark each \* 40 MCQ), No Negative Marking
- Descriptive Questions (05 Marks \* 2 Questions)

### (C) Minimum Passing Marks:

<b>Aggregate</b>
50% (Overall 50 Marks)

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

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

Sr. No.	Description	Max. Marks
1	JRF/ NET from UGC/CSIR or GATE with above 60 Marks	10
2	Workshop/Training Programme ( 2 Marks for one day)	10
3	Research Publications in Referred Journals and Paper Presented in National/ International Conference/ Seminar (2 Marks for each)	10
4	Personal Interview/ Viva voce	70
	<b>Total Marks</b>	<b>100</b>

**(F) 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.

**(G)** Subject wise Merit List will be prepared based on the total 100 Marks and admission will be given on merit basis only.

# **Syllabus of the Entrance Exam**

## **Paper I – Research Methodology (Common for all Streams)**

### **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.

## **Forensic Science**

### **Unit – I**

- Forensic Science : Definitions, History and Development
- Crime Scene Management and Investigation; Collection, Preservation, Packing and Forwarding of Physical and Trace evidences for analysis
- Legal and Court Procedure pertaining to Expert Testimony

### **Unit – II**

- Microscopy : Polarizing, Comparison, Stereoscopic, Fluorescent and Electron Microscopes
- Spectrophotometry : U. V., Visible, IR atomic absorption
- Neutron Activation Analysis
- X – rays
- NMR
- Chromatographic Techniques : TLC, GLC, GCMS, HPLC
- Electrophoresis : High and Low voltage electrophoresis, Gel electrophoresis and Immunoelectrophoresis

### **Unit – III**

- Fresh blood – Grouping and typing of fresh blood samples including enzyme types
- Analysis of stains of blood and allied body fluids for their groups and enzyme tests
- Cases of disputed paternity and maternity problems
- DNA profiling

### **Unit – IV**

- Analysis of illicit liquor including methyl and ethyl alcohol and alcohol in body fluids and breathe
- Analysis of petroleum products
- Chemical examination and Physiology / Pharmacology of :
  - Insecticides and Pesticides
  - Psychotropic Drugs : Sedatives, stimulants, opiates and drugs of abuse
- Extraction, Isolation and Identification of Poisons from viscera, tissues and body fluids

### **Unit – V**

- Classification of fire arms, ammunition and their compositions
- Comparison and Identification of Cartridges, Bullets and Fire arms
- Country made fire arms, Velocity, Penetration, Dispersion, Ricochet, Accidental Discharge, Determination of Range
- Bombs and Explosives : Composition, Ignition, Combustion and Detonation Examination of country made bombs, Improvised Explosive Devices ( IEDs )

### **Unit – VI**

- Identification of hair, determination of species origin, sex, site and individual identification from hair
- Classification and Identification of fibres
- Examination and identification of Saliva, Urine, Faecal matter and Milk
- Examination and Identification of Semen stains including the species origin and individual characteristics

## **Unit – VII**

- Physical analysis of the following : Soil, Glass, Paints, Laquers, Cement, Inks, Paper, Tool marks, Tyre Marks, Shoe Prints, Forensic examination of vehicles in cases of accident

## **Unit – VIII**

- Identification of individuals from bodily features Examination and identification of deceased from Skeletal remains Identification and individualization from foot prints Identification and individualization from teeth

## **Unit – IX**

- Preliminary examination of documents
- Identification of hand – writing, signatures and detection of forgeries
- Anonymous and disguised writings
- Reproduction of documents through photographic and mechanical means and their examination
- Physical and chemical erasures, obliterations, additions, alterations, indentations, secret writings and charred documents
- Inks, papers and their scientific examinations including instrumental analysis
- Age of documents
- Examination of typescripts, printed matter including currency notes and lottery tickets and mechanical impressions
- History, classification, search, lifting and examination of fingerprints
- Development of latent fingerprints by various methods
- Single digit classification and examination of chance prints
- Crime records and computerization of fingerprints

## **Unit – X**

- Medicolegal aspects of wounds
- Post – mortem Examination and PM changes
- Asphyxial Death
- Sexual offences
- Infanticide
- Forensic psychiatry and lie detection

## **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



## **Physical Education**

### **Unit – I Anatomy**

1. Cell and Its Parts – Cell Division
2. Tissues: Types and Functions
3. Brief Account of Different Systems of Human Body
4. Organizational Structure of Human Body

### **Unit – II Physiology**

1. Physiology of Muscular Activity, Neuro Transmission and Movement Mechanism
2. Physiology and Properties of Respiratory, Digestive, Circulatory and Endocrine System
3. Physiology and Properties of Nervous, Excretory, and Skeletal System
4. Bioenergetics and Recovery Process

### **Unit – III Kinesiology**

1. Joints, Movement around Joints, Planes and Axes
2. Fluid Mechanism, Kinetics and Kinematics (Linear and Angular)
3. Laws of Motion and Freely falling bodies (Projectile)
4. Principles of Lever, Angle of Pull, Equilibrium, Force and Spin

### **Unit – IV Athletic Rehabilitation**

1. Athletic Injuries – their Management and Rehabilitation
2. Therapeutic Exercises and Modalities
3. Massage Manipulation
4. Posture – Postural Deformities

### **Unit – V Sports Psychology**

1. Theories and Laws of Learning
2. Theories and Dynamics of Motivation, Individual Differences and Personality in Sports
3. Psychological Factor affecting Sports Performance – Stress, Anxiety, Tension, Self Confidence, Fear and Aggression
4. General Principles of Growth and Development
5. Transfer of Training Effects

### **Unit - VI Health Education**

1. Nutrition and Dietary Manipulation
2. Diseases and their Preventive and Therapeutic Aspects
3. Health-Related Fitness, Obesity and Its Management
4. Environmental and Occupational Hazards

### **Unit – VII Sports Training & Yoga**

1. Characteristics and Principles of Sports Training
2. Training Load and Periodization
3. Training Methods and Specific Training Programme for Development of Various Motor Qualities
4. Technical and Tactical Preparation of Sports
5. Sports Talent Identification – Process and Procedures
6. Meaning, Need, Importance, Types, Stages of Yoga

7. Meaning, Need, Importance, Types of Asanas, Pranayama, Bandha, & Kriyas

**Unit – VIII Evaluation Techniques in Physical Education**

1. Concept and Principles of Test, Measurement and Evaluation
2. Construction and Classification of Tests
3. Criteria of Test Evaluation
4. Concepts and Assessment of Physical Fitness, Motor Fitness, Motor Ability, and Motor Educability
5. Testing Psychological Variables – Competitive Anxiety, Aggression, Team Cohesion, Motivation, Self Concept, Personality
6. Anthropometric, Physiological, Biochemical, Physical Measurements of Different Variables

**Unit – IX Sports Criminology and Sports Law**

1. Sports Organizations & Governance
2. Constitutional Law: Issues & Implications in Sports
3. Broadcasting and Media Rights in Sports
4. Sports and Relevance of Competition Law
5. Issues of Criminal Liability in Sports
6. Medicine and Legal Liability in Sports
7. Sports Persons – Ads, Endorsements and Marketing: Legal Issues and Implications

**Unit – X Sports Doping (Forensic)**

1. Introduction and Concept of Sports Doping (Forensic)
2. National Anti-Doping Agency (NADA) and World Anti-Doping Agency (WADA)
3. Banned Performance Enhancing Drugs and Methods

## **Law**

### **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

### **Legal Theory**

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

### **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

### **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.

### **Criminal Procedure Code**

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

### **Indian Evidence Act**

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

## **Police Administration**

- Police Administration: Meaning, Nature and Scope
- Philosophical Foundations of Police Administration
- Evolution of Police in Ancient, Medieval and British Era
- Police Legislations: Indian Police Act, 1861 and Model Police Act
- Union Ministry of Home Affairs
- Police Set up at the Union, State and Local level
- Central Armed Police Forces
- Police Personnel Administration
- Police Reforms: Concept, Initiatives and Challenges
- Internal Security Threats
- Traffic Management & Road Safety
- Police Procedures & Investigation Techniques
- Criminology & Correctional Administration
- Police & Crime Prevention
- Issues and Challenges in Police Administration