

UNIVERSITY OF JAMMU

Notification

Syllabus of Entrance/Screening Test for the Post of Lecture Assistant (Zoology)

S.No	Examination Type	Subject	No. of Question	Marks	Duration
A	Multiple Choice Questions	General English, General Knowledge, Logical Reasoning, Basic Arithmetic, Analytical Ability Etc.	30	30	2hrs
B		Discipline Oriented	70	70	

A. General English, General Knowledge, Logical Reasoning, Basic Arithmetic, Analytical Ability Etc.

B. Discipline Oriented

I. **Ecology and Environmental Biology**

The Environmental: Physical environment; biotic environment; biotic and abiotic interactions, Ecological habitat, niche & Ecological equivalents, Nitrogen cycle Primary & Secondary productivity and their methods of determination, Characteristics of Population: Size & density, Dispersal & Dispersion, Age structure, Natality & Mortality, Life tables; Characteristics of a population; population growth curves; population regulation; life history strategies (r and K selection); interdemec extinctions, age structured populations. Community analysis and species diversity in communities, Succession: Types; mechanism; changes involved in succession; concept of climax, Species interaction; Negative: Competition, Predation, Parasitism; Positive: Commensalism, Mutualism Water and soil pollution, their causes & remedial measures. Competition, predation and parasitism, social behavior; Sources and Uses of Non-conventional energy; Isolation & territoriality, Biological Invasions; Energy flow in an ecosystem.

II. **Insect Diversity**

Basic of insect classification & Bionomics of insect orders (Thysanura, Collembola, Odonata, Orthoptera, Dictyoptera, Dermaptera, Hemiptera, Homoptera, Lepidoptera, Diptera, Coleoptera, Hymenoptera), General structure of head, thorax and abdomen, types of mouth parts and their diversity, types of antennae & legs of insects. Metamorphosis: Types and its control, different types of larvae and pupae, Compound eye, Chemoreceptor and Mechanoreceptor, Diapause in insects, Stridulation in insects, Defence mechanism.

III. **Ichthyology**

Distinctive characteristics of fishes, Outline classification of fishes with special reference to distinctive features, geographical distributions, classification and typical examples, Scales: Types, structure and functions of scales, Coloration: chromatophores, pigments and biological

significance of coloration in fishes Fins, their structure, modifications, Bioluminescence in fishes and its significance, Structure, modifications and functions of gills, Structure and development of air breathing organs in fishes, Electric organs: their structure and use in fishes, Venomous and poisonous fish, Deep sea fishes, Hill stream fishes, Migration in fishes, Osmoregulation in fishes: Fresh water, Marine water and migratory fishes.

IV. Human and Wildlife Ecology

Biosphere; its composition and potential, Wildlife; its significance, conservation (exsitu and insitu) and management, Wildlife habitats: forests and grasslands with their characteristics fauna, Wildlife census, Density, Saturation and carrying capacity, Important Wildlife of J&K State Endangered Mammals of India, Red Data Book, Principles of conservation, major approaches to management, Indian case studies on conservation/management strategy (Project Tiger, Biosphere reserves), Hot spots of India, Keystone species, National wildlife Act.

V. Animal Reproduction & Developmental Biology

Gonadotropin: types and functions, Sex steroids : Structure, Biosynthesis & Role in Reproduction, Corpora lutea, their structure and function, Spermatogenesis: Process, Ultra structure of sperms, Spermiogenesis, Oogenesis: Process, Vitellogenesis, Types of eggs and Egg membranes, Fertilization process, Menstrual cycle and role of hormones in menstrual cycle, Characteristics and mechanism of cleavage, Patterns of cleavage, Types of blastula, Cell aggregation and differentiation; axes and pattern formation in *Drosophila*, organogenesis – vulva formation in *Caenorhabditis elegans*, Extra embryonic membrane, Metamorphosis in Amphibians.

VI. Animal Physiology

Digestion and absorption of carbohydrates, proteins and lipids, Composition and Functions, Blood coagulation, Blood groups and transfusion, Buffer system, Heart and its working, Electro-cardiogram, Cardiac cycle in man, transport of gases, exchange of gases, respiratory volumes, Comparative physiology of excretion, kidney, urine formation, urine concentration, waste elimination, micturition, regulation of water balance, Types of neurotransmitters, Muscle: Types, Sliding, filament theory and cross bridge activity.

VII. Endocrinology

Classification of hormone, Brief account of structural features of endocrine glands, Pituitary gland, Localization, Chemistry and physiological roles of Adenohypophysial hormones and Neurohypophysial hormones, Thyroid Gland: Morphology, anatomy and histology of the gland, Biosynthesis of Thyroid hormones, Physiologic roles, Pathophysiology of Thyroid hormones, Parathyroid Gland, Adrenal Gland: Comparative Morphology, anatomy, functions and chemical structure of hormones released, Renin angiotensin system, Pathophysiology of adrenal hormones, Pancreatic Islets: Structure, Role and Regulation of Insulin and Glucagon, Mechanism of action of hormones.

VIII. Immunology

Innate and adaptive immunity, Immune cells and organs of immune system, Type of cells, Role of Immune cells in immunity, Primary, Secondary and Tertiary tissues and organs of immune system, B-Lymphocyte and T-Lymphocyte, Antibody: Types, Structure, Function

and generation of diversity. Monoclonal antibodies, MHC molecules, antigen processing and presentation, Immunological Techniques: ELISA

IX. Cell Biology

Membrane structure and function (Structure of model membrane, lipid bilayer and membrane protein diffusion, osmosis, ion channels, active transport, membrane pumps, B) Structural organization and function of intracellular organelles (nucleus, mitochondria, Golgi bodies, lysosomes, endoplasmic reticulum, Cell division and cell cycle (Mitosis and meiosis, their regulation, steps in cell cycle, Cell Communication, General principles of cell communication, Cell adhesion and role of different adhesion molecules, Gap Junctions, Extracellular Matrix, Integrins, Apoptosis and Cancer, Role of P⁵³

X. Molecular Biology

DNA as genetic material, Structure of DNA, Types of DNA (A, B and Z DNA), Repetitive DNA, Mutation, Types, causes and detection, DNA Repair and mechanisms, DNA replication, Origin of replication, enzymes involved and replication fork, DNA replication in eukaryotes and prokaryotes, Transcription in Prokaryotes and Eukaryotes, RNA processing: RNA splicing, polyadenylation, RNA editing, Types of RNA, Translation and translation inhibitors, Genetic code.

No. Estab./C&R/NTW/24/3449

Dated: - 15-04-2024


REGISTRAR

UNIVERSITY OF JAMMU

Syllabus of Entrance/Screening Test for the Post of Computer Operator

Total Marks: 100

Duration: 1:30 hours

- I. General English, General Knowledge, Logical Reasoning, Basic arithmetic, Analytical ability etc. 30 Marks
- II. Computer Applications 30 Marks
 - Hardware & Software
 - Operating System
 - Ms-Word, Ms-Excel, Ms-Access and Power Point Presentation
 - Working with Databases
 - UPS Functioning
 - Essential Security Measures
 - Working with Printers, its installation & Troubleshooting
 - Basics of Internet and Intranet
- III. Networking Devices 20 Marks
 - Introduction to various networking devices, Routers, Switches, Wired and Wireless Technology
 - IP Addresses, Troubleshooting
 - Introduction to Server and Network Security, database server, email server, Web server
 - Data Recovery and Backup
- IV. Programming 20 Marks
 - Introduction to Programming Languages
 - Software Life Cycle
 - Types of Software
 - Flowcharts, Pseudocodes, Algorithms


REGISTRAR


No. Estab./C&R/NTW/24/3414

Dated: - 04-04-2024

UNIVERSITY OF JAMMU

Syllabus of Entrance/Screening Test for the post of Browsing Assistant

Total Marks: 120

Time: 120 Minutes

S.No.	Examination Type	Section	Units	Marks	Duration
1.	Multiple Choice Questions	A	General English, General Knowledge, Logical Reasoning, Basic Arithmetic, Analytical Ability etc.	40	2 Hours
2.	Multiple Choice Questions	B	Discipline Oriented	80	

SECTION-A

- I. General English, General Knowledge, Logical Reasoning, Basic Arithmetic, Analytical Ability etc. **40 Marks**

SECTION-B

- I. **FUNDAMENTALS OF COMPUTER** **20 Marks**

Computer and its Components, Characteristics of Computer, Generation of Computers, RAM, ROM. Introduction to Binary Number System, Components of Computer, Input Units, Output Units, Processing Units, Storage, Classification of Computers, Networking, LAN, WAN, CAN, MAN, PAN. Introduction to Softwares, Types of softwares, Operating Systems, Computer Languages.

- II. **MS – OFFICE** **20 Marks**

MS-Word: Creating a new or blank document, Opening document, Basic Editing, Formatting, Copying and Moving Text, Page Formatting.

MS-Excel: Creating a new or blank workbook, Editing, Copy, Cut, Paste Special, Saving, Page Setup and Printing, View, Using Headers and Footers, Basic Formulas.

MS-PowerPoint: Creating a basic Presentation, Building Blocks of a Presentation, Working with Text, Working with Themes and Styles, Saving a Presentation.

- III. **COMPUTER APPLICATIONS** **20 Marks**

Hardware and Software, Working with databases, UPS functioning, Essential Security Measures, software installations. Introduction to Browsers, Types of Browsers, Chrome, Microsoft Edge, search engines.


IV. NETWORKING DEVICES

20 Marks

Introduction to various networking devices, routers, switches, wired and wireless technology, IP Addressing, troubleshooting. Introduction to Server and Network Security, database server, email server, Web server. Data recovery and backup. Printers- Overview, Types, driver installation, troubleshooting.

No. Estab./C&R/NTW/24/3451
Dated: 15-04-2024


REGISTRAR

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UNIVERSITY OF JAMMU

Notification

Syllabus for Entrance/Screening Test for the post of Receptionist

Marks: 120

Time: 2:00 Hours

General English

(Marks 20)

- Articles
- Clauses
- Pronouns
- Homonyms/homophones
- Tenses
- Clauses
- Punctuation
- Synonyms and antonyms
- Analogies
- Idioms and phrases
- Uses of Prepositions

General Knowledge and Current Affairs (India)

(Marks 15)

- Important dates in Indian History/Freedom Struggle, different dates and events
- First in world (Adventure, Sports, Discoveries). First in India (Adventure, Sports, Discoveries)
- Popular names of Personalities (Religion, Politics, Scientific discoveries, Geographical, Sports, History)
- The Newspaper world – (Current Dailies & Weeklies of India)
- Books & Authors – General
- Languages
- Capitals & Currencies
- United Nations Organization – Veto Powers

- No. of Countries as its Members
- Principal organs and their functions
- SAARC, ASEAN
- Everyday Science
- World famous Awards – (1. in Science)
(2. in Literature)
(3. in Sports)
- National Awards – (1. in Science)
(2. in Literature)
(3. in Sports)

- The World of Sports
- Climate & Crops in India
- Democratic Institutions
- Forms of Government
- Political & Physical divisions of world & India
- Important rivers & Lakes in India

- Current Events of National and International Level
- Role of mathematics in Economics
- Agriculture in economic development; Industrialization and economic development
- India Foreign Trade
- New economic reforms and growth of foreign trade
- Inflation – Concept and types; Causes and consequences

GENERAL KNOWLEDGE WITH SPECIAL REFERENCE TO J&K

(Marks 05)

- Popular names of personalities (Religion, Politics, Scientific discoveries, Geographical, Sports, History)
- Constitution of India – Formation, Fundamental rights, Directive principle.
- 73rd amendment of constitution of India.
- Centrally Sponsored Schemes – Guidelines and objectives.
- Important Tourist Destinations.
- History of J&K- places and their importance.
- Sustainable Development Goal.
- Agriculture in economic development, industrialization and economic development.
- Panchayati Raj Act, 1989 (as amended upto October, 2018 and rules)
- Climate and crops in J&K and India.
- Current events of Local, National and International Importance

NUMERICAL AND REASONING ABILITY

(Marks 15)

The candidates will be tested primarily on the fundamental mathematical concepts and application oriented reasoning. The broad areas will include the following;

Basic Arithmetic:

- Number System
- Percentage
- Average
- Profit & Loss
- Ratio & Proportion
- Speed, Distance and Time
- Mathematical reasoning

Reasoning Ability:

- Number series
- Letter series
- Coding decoding
- Direction sense
- Blood relations
- Statements and conclusions
- Logical Reasoning
- Mental Reasoning

BASIC CONCEPTS OF COMPUTERS

(Marks 05)

The candidates understanding of the concepts of computers and its application will be tested and it will broadly cover the following:

- Computer terminology
- Hardware and Software
- Storage and Operating Systems
- Safety and Security
- E-mail and Internet Usage

TECHNICAL SYLLABUS

(Marks 60)

- Front office operation
- Basic food production
- Basic food and beverage service
- Nutrition food science
- Health hygiene
- Accommodation operation
- Quantity food production
- Food and beverage management
- Quality food production
- Beverage operations
- Principles of management
- Principles of accounting
- Hotel maintenance
- Environmental studies
- Advanced food production
- Marketing sales management
- Advance beverage services
- Facility planning
- Hotel law
- Hotel financial management

No. Estab./C&R/NTW/24/ 3456
Dated:- 15-04-2024

REGISTRAR