(22)

AWADHESH PRATAP SINGH UNIVERSITY REWA (M.P)

SYLLABUS FOR Ph.D ENTRANCE EXAM

SUBJECT : ZOOLOGY

Max.Marks:100 Time: 02 Hours

Note: Syllabus is divided in two parts carries 100 marks only.

1.Part - A Research Methodology 50 Marks.

2. Part - B Related to the syllabus of the subject.

3.Each part (A&B) will be divided into 05 units each.

4. Syllabus will be equally divided among all units.

5. there shall be no negative marking.

15.6.22

डॉ.ए.के.तिवारी
अध्यक्ष
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अ.प्र.सिंह सेंगर विश्वविद्यालय रीवा (म.प्र.)

Botany Rewa (M.P.)

(23)

AWADHESH PRATAP SINGH UNIVERSITY REWA (M.P)

SYLLABUS FOR Ph.D ENTRANCE EXAM

SUBJECT : ZOOLOGY

Max.Marks:100 Time: 02 Hours

The Doctoral Entrance Test will have the question paper in two parts:

Part- A shall consist of 50 objective type compulsory questions of 1 mark each based on research methodology. It shall be of generic nature, intended to assess the research aptitude of the candidate. It will primarily be designed to test reasoning ability, date interpretation, and quantitative aptitude of the candidate. Part –A may be common within the same faculty.

Part –B shall also consist of 50 objective type compulsory questions of 1 mark each based on the subject of the research.

The syllabus of both parts of the question paper shall be approved by the concerned Board of Studies. The paper shall be prepared by a panel of examiners recommended by the examination committee of the concerned subject and approved by the vice chancellor.

The duration of the Doctoral Entrance Test will be of two hours.

There will be no negative marking.

The candidates must score minimum 50% marks in the entrance test to quality for the interview.

A list of the eligible candidates for interview shall be prepared by the RAC on the basis of the result to the Doctoral Entrance Test and the same shall be submitted to the Registrar to notify.

SYLLABUS FOR Ph.D ENTRANCE EXAM
SUBJECT : ZOOLOGY
Research Methodology
Part - A

Max.Marks:50

Note: there will be 50 objective type questions. No negative marking.

Unit-I Biological problems and assumption, Search of research problems, Reference and literature search, Record and presentation of data. Biological literature, Technical papers, Abstracts, Reprints and other literature, Rules for maintaining the Biosafety in the laboratory.

Unit-II Principle and Application: Microscope, Incubator, Hot Air Oven Laminar flow, Soxhlet, Spectrophotometer, Colorimeter, pH meter, B.O.D.. Centrifuge, Electrophoresis, Microtome, Electronic balance, Chromatography, Cryotomy, staining microphotography morphometry.

Unit-III Principles of Biological Research

Physico - chemical analysis of water and soil; estimation of primary and secondary productivity. Estimation of biomass and gross productivity. Qualitative and quantitative analysis of plankton. Methods of collection, preservation and identification of bentbos aod macrovegetation.

Unit-IV Biostatistics: Mean, Medium, Mode, Histogram, Frequency curve, Frequency Polygons, standard Deviation, and Standard Error, Normal & Binomial distribution, Test of Significant Based on large and Small sample(.:t-test, Chi-Square test), ANOVA basics of correlation and regeration analysis.

Unit-V Computer Application: Basic Idea of computer, (MS world, power point, excel. Bioinformatics: definition, role and limitation, Biological Data type. Classification biological data base sequence data base, Gene bank swiss – proy. Secondary nucleotide and protein sequence data base, CUTG, PROSTIG, specialized data base; : KEGG, ENZYME.

References:

1. Kothari, C.R. 1990. Research Methnology Methods and Techniques.New Age international 418p.
2. Garg, B.L., Knrodia,R., Agarwal,F.and Agarwal,2002.*An* introduction to Research Methodology RBSA Publishers.
3. Trochim, W.M.K., 2005 Research Methods: the concise Jmowledge base, Atomic Dog Publishing 270P
4. Sinha, S.C. end Dhimnn A.K., 2002. Research Methodology, EssEss Pu blications. 2 volumes.
5. Sucdecor, GW and Cochran, WG (1968) 'Statistical methods' Oxford & JBH, Delhi

PART B

Max. Marks: 50 MM

Note: There will be 50 objective type of questions. No negative marking.

UNIT-I Cell and Its Structural organization and function of intracellular organelles: Cell membrane/wall, nucleus, mitochondria, Golgi bodies, lysosomes, endoplasmic reticulum

Cell division and cell cycle; Mitosis and meiosis, their regulation, step in cell cycle. Biomolecules: Structure, functions, properties and their significance (protein, Carbohydrate, Lipids, Nuclei Acids and Vitamins)

UNIT-II Mendelian Principle: Dominance, segregation, independent assortment, deviation from Mendelian inheritance and genetic variation. Concept of gene and Genetic engineering, Cloning and Transgenics.

UNIT-III Principles and methods of Taxonomy: Concepts of species and, hierarchical taxa, biological nomenclature, classical and quantitative methods of taxonomy, animals and microorganisms.

UNIT-IV Level of structural organization: Unicellular, colonial and multicellular forms: levels of organisms of tissues, organs and systems, comparative anatomy of living animals.

Emergence of evolutionary thought: Lamarckism; Darwin – Concepts of variation, adaptation, Mutation struggle, fitness and evolutionary synthesis

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UNIT-V **Ecological:** Physical condition of environment: temperature, light & water, Biogeochemical cycles; Ecosystem, concept Structure and function, Food chain and food web: Energy flow; Succession.

Aquaculture & Biodiversity: Culturable animals.

Fisheries Biology

Brief account of major fisheries in India and Madhya Pradesh. Freshwater and Marine fisheries. Insect pest & control, culture of Beneficial insects. Harmful Insects.

References:

1. A text book of animal physiology -A.R. Berry
2. A text book of animal Immunology -A.K. Beny
3. An introduction to Embryology -A.K. Berry
4. An introduction to Embryology - A.K. Berry
5. A text book of Endocrinology -A.K.Berry
6. Cell Biology – by Veer Bala Rastogi
7. Unified Zoology – by V.K. Tiwari, V.K. Singh & S.M. Saxena
8. Unified Zoology – by JK. Awasthi & S.M Saxena
9. A text book of Chordates & Non Chordates – by Jordan and Nigam
10. Ecology H.S. Singh & E.P. Odum
11. Fish and Fisheries by Jhingran

15-6-22

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