



UNIVERSITY OF KOTA

Semester - I

PG Diploma in Reptilian Science

(Tentative Syllabus -2023-24)

RS 101: Origin, Evolution and Taxonomy of Reptiles

Min Pass Marks: 40 Duration -3 hrs. Max Marks : 100

UNIT-I

Origin & Evolution of Reptiles: Origin and Evolution; The First Reptiles; Rise of Dinosaurs; Permian Reptiles, Mesozoic Reptiles, Cenozoic Reptiles; Anapsids, Synapsids, Diapsids and Sauropsids.

UNIT-II

Classification and Phylogeny: Phylogeny and Modern Definition; General classification of extinct and living reptiles up to family, focusing on major groups.

UNIT-III

General Characteristics of Reptiles: General Characteristics of Four orders of Reptilia: Testudines, Sphenodontia, Squamata, Crocodilia.

UNIT-IV

Extinct Reptiles: General Distinguishing features; Pre-scientific History, Research on Extinct reptiles, "Dinosaur Renaissance" and beyond; Classification; Paleobiology; Extinction.

UNIT-V

Distribution and Diversity: Living Reptiles of India with special reference to Rajasthan; (Chelonia, Squamata, Crocodilia).

RS:102 Morphology, Anatomy and Physiology of Reptiles

Min Pass Marks: 40

Duration -3 hrs.

Max Marks: 100

UNIT-I

General Account of Reptiles: Habitats of reptilian species. (Testudines, Sphenodontia, Squamata, Crocodilia)

UNIT-II

Morphology of Reptiles: Size; Shape; Basic Morphological Characters of Reptiles.

UNIT-III

General Idea of Anatomy of Reptiles : Integument and integumentary derivatives, molting process; Musco-skeletal system; Gastrointestinal Tract and accessory digestive glands with special reference to poison gland; Respiratory system; Cardio-vascular System; Nervous system; Anatomy of eye and ear; Sensorial Organ; Urino-genital system .

UNIT-IV

Physiology of Reptiles: Thermo-regulation; Perception; Mechanism of Digestion; Blood Circulation; Endocrine and Exocrine Glands; Immune-system; Hearing and sensations.

UNIT-V

Breeding Biology of Reptiles: Reproduction in Testudines, Sphenodontia, Squamata, Crocodilia and Parental care in Reptiles.

RS: 103 Cytogenetics, Pathology and Care guidelines of Reptiles

Min Pass Marks : 40

Duration -3 hrs.

Max Marks: 100

UNIT-I

Cytology of Reptiles: Chromosome Structure; Chromosome aberrations.

UNIT-II

Molecular Biology of Reptiles: Molecular Adaptations for Sensing and Securing Prey/Prey relocation; Molecular basis *for* extreme adaptation.

Genetics of Reptiles: Sex determination; Genetic Mutations in Reptiles.

UNIT-III

Major Reptilian Diseases and their treatment:Ophidiomycosis; Infectious stomatitis (mouth rot); Parasitic infection (cryptosporidiosis), Skin Infections, inclusion body disease, respiratory disease, and septicaemia.

UNIT-IV

Indian Government initiative to protect and conserve reptiles:Crocodile conservation project, Turtle Project. Zoological gardens and Museum, Red Data Book, Captive breeding.

UNIT-V

Captivity Care of Reptiles(in reference to Wild Life Conservation Rules & Regulations): Pet Reptiles; CareGuidelines; Snake Charming in India; Ethics of reptilian keeping.

RS: 104 Laboratory Practical and Case studies

Min Pass Marks: 50

Max Marks-100

1. Museum Specimens	- 20
2. Animal Preservation Techniques	- 20
3. Case Studies	- 15
4. Presentation	- 15
5. Viva-Voice	-15
6. Record	-15

RS-105 Practical

Min Pass Marks: 50

Max Marks: 100

Visit to National Parks /Sanctuary/ any Natural Habitats

A detailed report of visit of National park/sanctuary/ any Natural Habitatshas to be prepared submitted and presented.

√ Chart Making	-20
√ Visit to Chambal Crocodile/ Gharial Sanctuary	- 20
√ Presentation	-20
√ Viva- Voice	-20
√ Record	-20

SEMESTER-II

(Tentative Syllabus 2021 – 2022)

RS:206 Ethology and Poisonous bite of Animal Kingdom

UNIT-I

Ethology of Reptile: Hibernation and Estivation; Brumation , Feeding; Locomotion; Territory formation.

UNIT-II

Reptile versus Bees and Wasps: Characteristics; Social behavior; Ecology; Relationship with Human.

Reptile versus Myriapods: Description; Life Cycle; Ecology.

UNIT-III

Reptile versus spiders: Ecology and Behaviour of Spiders; Web formation; Human Interaction; Spiders in culture.

Reptile versus Scorpion: Geographical distribution; Morphology; Relationship with humans.

UNIT-IV

Reptile versus Frogs and Toads: Poisonous anurans; Recreational ingestion of their toxins.

UNIT-V

Snakes and Lizards: Venomous and non-venomous snakes; hooding and spitting; snake bite (sign and symptoms).

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RS: 207 Toxicology

Min Marks : 40

Duration -3 hrs.

Max Marks: 100

Unit I

Preliminary idea about Poisons: Metallic Poison (Arsenic, Lead, Iron); Deliriant poisons(*Datura*, *Cannabis*, Cocaine).

Unit II

Agricultural poisons- Organo-phosphorous, Organo-chlorine. Classification and description of common insecticides and pesticides used in India.

Unit III

Animal Poison: Principal animal poisons and their toxic effects on Animal and Human.

Unit IV

Venom: Bio-chemistry; Toxins and Immunological aspects of Animal Venom.

Unit V

Anti-venom: Poison versus Venom; Introduction to Anti-venom.

RS :208 Management and Conservation

Min Pass Marks : 40

Duration -3 hrs.

Max Marks: 100

Unit I

Ecosystem of Ophio-fauna: Importance of snakes in ecosystem, awareness among the people about importance of snakes, Conservation: Illegal Trades and trafficking; Interaction with Human; Myths & Facts.

Unit II

Man- Animal Conflicts; Risk analysis; Rescue, handling and rehabilitation; Animals in relation to Human Health.

Unit III

Animal conservation laws and Constitutional provisions: Article 48(A) Article 51 (A) Wild life protection act 1972; The Indian forest Act 1927; Forest conservation Act 1980; Environmental Protection Act 1986

Unit IV

Wildlife Management in India: Wildlife Sanctuaries, National Parks, Biosphere Reserves, Brief idea of important organizations-CZAI, NTCA, IBWL, ZSI, BSI, IUCN, WTI, WWF, BNHS, WII, FRI, WLCCB, NBI, CITES.

Unit V

Treatment of animal bite: First aid in reference to *Mahobia Technique*; Traditional Treatments.

RS: 209 First Aid, Training & (Project Practical)

Min Pass Marks:- 50

Max Marks :- 100 Marks,

Training project and case study

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| 1. First aid Practical training. | - 20 |
| 2. Basic handling and rescue training of reptiles. | - 20 |
| 3. Photography of reptiles | - 15 |
| 4. Presentation | -15 |
| 5. Viva- voice | -15 |
| 6. Record | -15 |

RS : 210

Min Pass Marks:- 50

Max Marks :- 100

Dissertation

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| √ Internal | 30 Marks |
| √ External | 30 Marks |
| √ Presentation | 20 Marks |
| √ Viva-voice | 20 Marks |