SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED

Choice Based Credit System (CBCS) Course Structure

Faculty of Science& Technology

B. Sc. First Year Syllabus w.e.f. June, 2019

Zoology

Semester –II

Paper: CCZ-II: Comparative Anatomy and Developmental Biology of Vertebrates

Section –A **Title of Paper: Paper-III:** Comparative Anatomy of Vertebrates

Periods : 45 **Credits: 02 (Marks: 50)**

Objectives:

1. To understand Anatomical structure of Vertebrates.
2. Explaining the basic aspects of evolution of various organs of vertebrates.
3. Understand the phylogenetic progression in vertebrate body and its systems.
4. To know about the extreme specialization in different organ systems in vertebrate groups in response to the environment.

UNIT – I **11**

1. General characters, origin and Ancestry of Vertebrates.
2. **Integumentary System:**
   Development, General structure and function of integument;
   Derivatives of integument- Epidermal and Dermal derivatives;
3. **Skeletal System-** Evolution of visceral arches; Comparative account of Limbs and girdles.

UNIT – II **12**

1. **Digestive System:**
   Brief account of alimentary canal and digestive glands.
2. **Respiratory System:** Brief account of different respiratory organs in vertebrates- Gills, lungs, skin, air sacs and Accessory respiratory organs.

UNIT – III **11**

1. **Circulatory System:** Brief account of Evolution of heart in vertebrates.
   Modifications of aortic arches in vertebrates;
   Blood circulation in various vertebrate groups- Single and Double circulation
2. **Urinogenital System:** Developmental Succession of kidney, Evolution of urinogenital system in vertebrates.

UNIT – IV **11**

1. **Nervous System:** Structure of Neuron; Comparative account of Brain of Vertebrates.
2. **Sense Organs** - Types of receptors- Mechanoreceptors; Photoreceptors; Phonoreceptors.

Outcome of the Course:

1. The student will be able to identify and understand comparative anatomical structure of vertebrate organ systems.
2. The learner will be able to understand the evolution of various organs and systems in the vertebrate body according to its environment.
3. Understand the plasticity of organ systems to adapt to the environment and acquire different novel forms.