

**MOHANLAL SUKHADIA UNIVERSITY, UDAIPUR**

**B. Sc. BIOTECHNOLOGY I YEAR TDC (2016-17)**

**Paper II : *Animal Biology and Diversity***

**Unit-I**

Introduction to animal world, classification of animal kingdom, taxonomic hierarchy of animals, organization of animal body-scheme of organization, levels of organization; body plan; symmetry of body plan; germ layers; body cavity.

**15 Credit hours**

**Unit-II**

General characteristics and classification of invertebrates. General characteristics of different phyla: Protozoa, Porifera, Coelenterata, Platyhelminthes, Archelminthes, Arthropoda, Annelida, Mollusca, Echinodermata. A general account of morphology, structure locomotion, excretion and reproduction in invertebrates.

**15 Credit hours**

**Unit-III**

General characteristics and classification of vertebrates. General characters of Protochordates, Pisces, Amphibia, Reptilia, Aves, Mammalia. A general account of nutrition, respiration, excretion and reproduction in vertebrates.

**15 Credit hours**

**Unit-IV**

Animal tissues – Organization of tissues, organs and organ systems, Epithelial tissue (Types of simple and stratified epithelium, glandular epithelium types of glands), Connective tissue (Connective tissue proper, supportive connective tissue, fluid connection tissue (blood and lymph), muscular tissue (striated muscle, smooth muscle, cardiac muscle), nerve tissue. Elementary idea of vermiculture, sericulture, apiculture and pearl industry.

**15 Credit hours**

**Unit-V**

Developmental biology – foetal membranes, placenta and its classification. Development of chick upto 4 somite stage, embryonic induction; brief account of primary organism, determination, differentiation, competence, organogenesis and growth, regeneration, concept of stem cells.

**15 Credit hours**

### **Recommended Books**

1. Ganguli, B.B., Sinha, A.K. and Adhikari, S. 2001. Biology of Animals. (Vol. I and III). New Central Book Agency, Calcutta.
2. Kotpal, R.L. 1990. Modern Text Book of Zoology, Invertebrates, 8<sup>th</sup> Edition. Rastogi Publication, Meerut.
3. Jordan, E.L. and Verma, P.S. 2001. Invertebrate Zoology. S. Chand and Co., New Delhi.
4. Balinsky. Introduction to Embryology. Panima.
5. Subramaniam, T. Developmental Biology. Narosa.