

**GUJARAT UNIVERSITY**  
(EFFECTIVE FROM JUNE-2023)  
**MULTIDISCIPLINARY / INTERDISCIPLINARY COURSE- THEORY**  
**B.Sc. SEMESTER – II ZOOLOGY**  
**MDC-ZOO-124 T (2 CREDIT)**  
**[IKS, BASIC ANIMAL TAXONOMY AND ANIMAL DIVERSITY (Non-chordates)]**

**Course Outcomes:**

- Students will develop understanding of fundamental body organizations, taxonomy and nomenclature of animals.
- Students will be able to visualize anatomical features of invertebrates by studying type animals.

**Unit I: IKS & ANIMAL DIVERSITY (Non-chordates) – Systematics:**

Role of Animals in Yoga

Animal keeping in Ancient India

General characters, salient features and Classification of Invertebrates, starting from Kingdom up to Class, giving reasons & suitable examples (as per practical syllabus):

Porifera - General characters, Salient features and Classification

Coelenterata - General characters, Salient features and Classification

General characters, Salient features and Classification- Platyhelminthes and Aschelminthes

**Unit II: ANIMAL DIVERSITY (Non-chordates): Type study**

General topics -Polymorphism in Coelenterata (Hydrozoa and Scyphozoa)

Types of coral Reefs

Hydra (*Hydra vulgaris*):

Systemic position, Habits and habitat, External Morphology, Internal structure (Coelenteron, Body wall), Locomotion, Nutrition, Respiration, Excretion and Osmoregulation, Nervous system, Reproduction (Asexual & Sexual), Regeneration.

**References:**

1. Dhami PS, Dhami JK: Textbook of Invertebrates, 5th ed. New Delhi (DL): S. Chand & Company; 2021
2. Kotpal RL: Textbook of Invertebrates and vertebrates. 12th ed. Meerut (UP): Rastogi Publishers; 2020.
3. Wallace AF, Dyson RH: Principles of Animal Taxonomy, George Gaylord Simpson. Columbia University Press, 1961
4. Kumar P, Mina Usha: Life Sciences: Fundamental and practices, 6th ed. Haryana (India); Pathfinder Publications, 2016
5. Veterinary Medicines and Animal Keeping in Ancient India.  
Link: <https://www.asianagrihistory.org/pdf/volume10/veterniray.pdf>
- 6 Link: <https://www.pashudhanpraharee.com/role-of-animals-in-yoga/>

**GUJARAT UNIVERSITY**  
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**MULTIDISCIPLINARY / INTERDISCIPLINARY COURSE- PRACTICAL**  
**B.Sc. SEMESTER – II ZOOLOGY – 124 P**  
**MDC-ZOO-124 P (2 CREDIT)**  
**[BASED ON THEORY PAPER: MDC-ZOO-124 T]**

**Unit I: IKS & ANIMAL DIVERSITY (Nonchordates) – Systematics:**

(A) Identification & classification of invertebrates (Kingdom to Class):

Porifera : Leucosolenia, Euspongia, Hylonema

Coelenterata : Hydra, Physalia, Aurelia, Sea anemone, Coral.

Platyhelminthes : Planaria, Liverfluke, Tapeworm.

Nemathelminthes : Enterobius, Ascaris, Rhabditis

(B) Temporary mounting/slide of Spicules (Porifera)

(C) Role of Animals in Yoga poses

**Unit II: ANIMAL DIVERSITY (Non-chordates):**

Study of Hydra (*Hydra vulgaris*) - by Slides / Charts / Video / Photographs:

W.M Hydra, L.S. Hydra, T.S. Hydra,

Hydra with bud, Hydra with gonads

T.S. of Hydra passing through testis

T.S. of Hydra passing through ovary