

Term End External Examination 1<sup>st</sup> Semester (Session-Feb 2025)

## Subject: Zoology

Course No and Title: ZOL122M/ Introduction to Systematics &amp; Invertebrates

Time: 2.15 hours Max Marks:100 Min. Marks:40

Section A: Objective Type Questions

- Q1. Choose the appropriate Answer: (8x1.5=12)**
- i. Gamma ( $\gamma$ ) taxonomy involves**  
 A Large-scale evolutionary studies including phylogenetics and ecology  
 B Morphological classification only  
 C Classification based on fossil records exclusively  
 D Determining genetic disorders in species
- ii. Which of the following correctly represents the taxonomic hierarchy of an animal**  
 A Phylum → Class → Order → Family → Genus → Species  
 B Genus → Order → Class → Phylum → Family → Species  
 C Class → Phylum → Order → Family → Genus → Species  
 D Family → Class → Order → Phylum → Genus → Species
- iii. Which of the following is a characteristic feature of Protozoa**  
 A Presence of a notochord  
 B Unicellular eukaryotic organization  
 C Multicellular body structure  
 D Presence of a chitinous exoskeleton
- iv. Which of the following Cnidarian forms is responsible for asexual reproduction**  
 A Medusa  
 B Polyp  
 C Turbellaria  
 D Ephyra
- v. The larval stage of *Taenia solium* that causes cysticercosis in humans is called**  
 A Miracidium  
 B Cercaria  
 C Cysticercus  
 D Oncosphere
- vi. Which of the following is an adaptive advantage of torsion in gastropods**  
 A Better balance for  
 B Facilitates coiling of the shell

crawling

- C Brings the mantle cavity and gills to the anterior region for protection
- vii. Which echinoderm class has a larval form called Pluteus**  
 A Asterozoa  
 B Echinozoa  
 C Crinozoa  
 D Holothurozoa
- viii. Which class of Platyhelminthes includes free-living flatworms**  
 A Cestoda  
 B Trematoda  
 C Turbellaria  
 D Monogenea

Section-B: Descriptive Type Questions (Short Type)**Q2: Answer all the Questions (8 x 4 =32)**

- i.** Differentiate between taxonomy and systematics.
- ii.** How does systematics contribute to biological research and biodiversity conservation
- iii.** Write the general characters of Cnidaria.
- iv.** Differentiate polyp with Medusa.
- v.** Write general characteristics of Platyhelminthes.
- vi.** What are the key morphological features of *Taenia solium*
- vii.** List the general characteristics of Arthropoda.
- viii.** What is insect metamorphosis? What are its types?

Section – C: Descriptive Type Questions (Medium Type)**Answer all the questions: (4 x 7=28)**

- Q3.**
- What are the limitations of morphological taxonomic characters.

**OR**Differentiate between  $\alpha$  (alpha),  $\beta$  (beta), and  $\gamma$  (gamma) taxonomy with examples.

- Q4.**
- Describe polymorphism in Cnidaria.

**OR**

Explain the general characteristics of Protozoa with examples.

- Q5.** Describe the life cycle of *Taenia solium* with a well-labeled diagram.

**OR**

Describe the mechanism of filter feeding in polychaetes.

- Q6.** Explain the process of torsion in gastropods with suitable diagrams.

**OR**

Describe the different types of insect mouthparts with examples.

**Section – D: Descriptive Type Questions (Long Type)**

**Answer any two of the following: (2 x 14=28)**

- Q7.** Describe taxonomic characters with special reference to morphological and molecular characteristics. How have molecular techniques revolutionized systematics?
- Q8.** Describe the skeletal elements in Porifera and their functions.
- Q9.** Give a detailed account of the morphology, life cycle, and pathogenicity of *Ascaris lumbricoides* with a well-labeled diagram.
- Q10.** Give a detailed account of the water vascular system in echinoderms, explaining its structure, function, and role in locomotion and feeding.