



**SCHEME OF EXAMINATION**

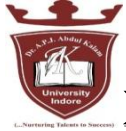
**B.Sc. Under Graduate Annual System Syllabus**

(W.e.f. July 2017 Onwards)

**Class: - B.Sc**

**Subject: - Zoology**

<b>S.NO.</b>	<b>Classes</b>	<b>Paper</b>	<b>Title of the paper</b>	<b>Marks of Theory</b>	<b>Marks of CCE</b>	<b>Total Marks</b>
1	B.Sc. I Year	Ist	Invertebrates (BZS101T)	42.5	7.5	50
2	B.Sc. I Year	IInd	Cell Biology and Development Biology (BZS102T)	42.5	7.5	50
3.	B. Sc.	Practical Based on Paper I and IInd Biology				50
<b>Total</b>						<b>150</b>



**B.Sc. Under Graduate Annual System Syllabus**  
(W.e.f. July 2017 Onwards)

**Class: - B.Sc.**  
**Subject: - Zoology (BZS101T)**  
**Paper:-Ist**  
**Paper Title: - Invertebrate**

**Max Marks: - 42.5**

**UNIT-I**

1. Elementary Knowledge of Zoological Nomenclature and International Code.
2. Classification of Lower Invertebrates (According to Parker and Haswell 7<sup>th</sup> edition)  
(Protozoa, Porifera, Coelenterata, Helminthes)
3. Classification of Higher Invertebrates (According to Parker and Haswell 7<sup>th</sup> edition)  
(Annelida, Arthropoda, Mollusca, Echinodermata, Hemichordata)

**UNIT-II**

1. Protozoa- Type Study of Plasmodium.
2. Protozoa and Diseases.
3. Porifera- Type study of Sycon.
4. Coelenterata- Type study of Obelia
5. Corals and Coral Reef formation.

**UNIT-III**

1. Helminthes- Type study of Liver Fluke.
2. Nematodes and diseases.
3. Annelida- Type study of earthworm (Pheretima)
4. Metamerism in Annelida-.
5. Structure and significance of Trochophore larva.

**UNIT-IV**

1. Arthropoda- Type study of Prawn.
2. Larval forms of Crustacea.
3. Insects as Vectors of Human Diseases
4. Mollusca- Type study of Pila
5. Larval forms of Mollusca

**UNIT-V**

1. Echinodermata- External features and water vascular system of Star fish.
2. Larval forms of Echinoderms.
3. Minor Phyla – Ectoprocta & Rotifera.
4. Hemichordata- Type Study of Balanoglossus
5. Affinities of Balanoglossus



# DR. APJ ABDUL KALAM UNIVERSITY, INDORE

B.Sc. Under Graduate Annual System Syllabus  
(W.e.f. July 2017 Onwards)

**Class: - B.Sc.**

**Subject: - Zoology (BZS102T)**

**Paper: - IInd**

**Paper Title: - Cell Biology and Development Biology**

**Max Marks: - 42.5**

## **UNIT-I**

1. History of Cell Biology.
2. Prokaryotic and eukaryotic Cells.
3. Structure and Function of Golgi Body, Endoplasmic Reticulum, Lysosomes Structure and Function of Mitochondria, Ribosome, Centriole, Microsome

## **UNIT-II**

1. Structure and Function of Nucleus and Nucleous
2. Structure and Function of Typical Chromosome.
3. Special Type of Chromosome- Lampbrush and Polytene.
4. Cell Cycle, Mitotic and Meiotic cell Division

## **UNIT-III**

1. Spermatogenesis
2. Oogenesis
3. Fertilization
4. Parthenogenesis
5. Regeneration.

## **UNIT-IV**

Development of Frog

1. Cleavage
2. Blastulation
3. Fate map Construction
4. Gastrulation and formation of three germinal layers
5. Structure of Tadpole Larva

## **UNIT-V**

Development of Chick

1. Cleavage
2. Blastulation
3. Fate map Construction
4. Gastrulation
5. Development of Chick Embryo upto formation of Primitive Steaks
6. Extra embryonic membrane in Chick



(W.e.f. July 2017 Onwards)

## PRACTICAL

The Practical's work will be based on theory syllabus and the candidates will be required to show knowledge of the following -

1. Study of Museum Specimens, slides relevant to Invertebrates Studied the type study in theory
2. Mounting/ Squash preparation
  - a. Statocyst of Prawn
  - b. Ctenidium/ Redula/ Osphiridium of Pila
  - c. Earthworm - septal nephndia
  - d. Squash preparation Onion Root tip
3. Dissection (Any- 1)
  - a. Earthworm: Digestive system, nervous system and reproductive system.
  - b. Prawn : Nervous system, Appendages.
  - c. Pila: Nervous system
- 4 Exercise related to Frog and Chick Embryology (any -2)
- 5 Exercise related to Cell Biology (any -2)
  - a. Stages of Mitotic and Meiotic Cell division
  - b. Special Type of Chromosome.

## Distribution of Marks

1. Dissection	08
2. Spotting	16
3. Mounting/ Squash Preparation	06
4. Exercise Related to Embryology	05
5. Exercise Related to Cell biology	05
6. Viva- voca	05
7. Record	05