

Km. Mayawati Govt. Girls P.G. College, Badalpur, G.B. Nagar

Dept of Zoology:

Assignments: M.Sc.-Ist Semester Batch-2025-27

Instructions for assignments

- Mark of Each Assignment: 5 (Deduction of Marks: 1 mark deducted for Late Submission and 1 for late personation.), Prsenation: 5
- Upload your assignments and project before due date on google classroom <https://classroom.google.com/c/ODA2NzAyMzE5NjM0?cjc=dlgiqtq4> (Class code- dlgiqtq4)
- Presentation mode (online/offline) will be update before presentation date depending upon situations.
- Submit your project proposal upto 25-10-2025 to Dr. Prof D.C. Sharma, He will allot Project supervisor
- The teacher will revert your evaluated assignments and internals by email, you can check and raise your point of view (if any) within one week, after that marks will be uploaded.
- Tentative date of internals: November IInd week
- All student presentations were recorded online and uploaded on Zoology Department YouTube account. Make a video of your assignments and upload it on Zoology Department YouTube account with the help of Miss. Sumbul Zehra, Miss Jyoti Sharma, Miss Himanshi, Miss Shakshi Bhardwaj and Akansha

Class Roll Number	Name of Student	B050701T : Evolutionary and Taxonomic Approaches			B050702T : Animal Diversity- Non-Chordata			B050703T : Biochemistry			B050704T : Cell and Molecular Biology		
		Ms. Neetu Singh and Miss. Himanshi			Ms. Neetu Singh and Miss. Akansha			Prof. Dinesh C. Sharma and Miss. Sumbul Zehra/Miss Shakshi			Prof. Dinesh C. Sharma and Miss. Jyoti Sharma		
		Assignment & Presentation			Assignment & Presentation			Assignment & Presentation			Assignment & Presentation		
		Topic of assignment	Submi sion Last date	Presentatio n Date	Topic of assignment	Submi sion Last date	Present ation Date	Topic of assignment	Submi sion Last date	Present ation Date	Topic of assignment	Submiss ion Last date	Present ation Date
1	AMRIT KAUR	Explore the historical development and future scope of biosystematics in modern biology.	21 Oct 25	27 Oct 25	Explore the types and evolutionary significance of coelom formation	28 Oct 25	3 Nov 25	Explain the different types of stabilizing interactions in molecules.	4 Nov 25	10 Nov 25	Define the cell theory. How has it evolved over time, and what are its modern implications in biology?	11 Nov 25	17 Nov 25
2	ANAMIKA	Analyze different theories of biological classification and their relevance in current taxonomy.	21 Oct 25	27 Oct 25	Analyze different types of body symmetry, such as radial, bilateral, and asymmetry	28 Oct 25	3 Nov 25	Describe the structure and function of carbohydrates in biological systems.	4 Nov 25	10 Nov 25	Compare and contrast the ultrastructure of prokaryotic and eukaryotic cells. Highlight key differences in organelle composition and function.	11 Nov 25	17 Nov 25
3	ANJALI KUMARI	Discuss the hierarchical structure of taxa and the challenges in categorizing higher taxa.	21 Oct 25	27 Oct 25	(Focus on organisms that undergo metagenesis, such as cnidarians.	28 Oct 25	3 Nov 25	How do the chemical structures of lipids contribute to their biological functions?	4 Nov 25	10 Nov 25	Discuss the origin and function of mitochondria. How does the endosymbiotic theory explain the presence of mitochondria in eukaryotic cells?	11 Nov 25	17 Nov 25
4	DEEPIKA KUMARI	Overview of the rules and principles governing zoological nomenclature.	21 Oct 25	27 Oct 25	Investigate how protozoa move using pseudopodia, cilia, or flagella	28 Oct 25	3 Nov 25	Explain the role of proteins in biological systems.	4 Nov 25	10 Nov 25	Explain the structure and roles of the endoplasmic reticulum (ER). Differentiate between rough and smooth ER in terms of their structure and function.	11 Nov 25	17 Nov 25
5	DIVYA	Study how behavior influences species classification and its importance in evolutionary biology.	21 Oct 25	27 Oct 25	Discuss various reproduction methods in protozoa, such as binary fission and conjugation	28 Oct 25	3 Nov 25	What are nucleic acids, and how do their structures support their functions?	4 Nov 25	10 Nov 25	Describe the structure and function of the Golgi complex. What role does it play in protein modification and transport within the cell?	11 Nov 25	17 Nov 25

6	HIMANSHI	Investigate the role of cytogenetic information in species classification and evolutionary studies	21 Oct 25	27 Oct 25	Examine the composition of sponge skeletons and their ability to regenerate lost parts.	28 Oct 25	3 Nov 25	Describe the function of vitamins in biochemical processes.	4 Nov 25	10 Nov 25	What are lysosomes, peroxisomes, and centrosomes? Discuss their structure, functions, and how they contribute to cellular maintenance.	11 Nov 25	17 Nov 25
7	IRAM SAIFI	Assess the applications of molecular tools in taxonomy and phylogenetic analysis.	21 Oct 25	27 Oct 25	Study the different forms, such as medusa and polyp, within the life cycle of cnidarians.	28 Oct 25	3 Nov 25	What is the Ramachandran plot, and why is it important for understanding protein structure?	4 Nov 25	10 Nov 25	Outline the phases of the cell cycle. How is the cell cycle regulated, and what happens when this regulation is disrupted?	11 Nov 25	17 Nov 25
8	KHUSHI	Compare various species concepts and their implications in taxonomy and evolutionary studies.	21 Oct 25	27 Oct 25	Explore the formation of coral reefs and their ecological roles, along with threats like bleaching	28 Oct 25	3 Nov 25	Differentiate between the secondary, tertiary, and quaternary structures of proteins.	4 Nov 25	10 Nov 25	Explain the ultrastructure of biomembranes. How do their structures enable various types of transport across the membrane?	11 Nov 25	17 Nov 25
9	KHUSHI NAGAR	Evaluate how subspecies, varieties, and morphs contribute to biological diversity.	21 Oct 25	27 Oct 25	Analyze the evolutionary affinities of Ctenophora with other non-chordate phyla.	28 Oct 25	3 Nov 25	What is the significance of protein domains, motifs, and folds in protein function?	4 Nov 25	10 Nov 25	Describe the structure of the nuclear envelope and nucleolus. What are their primary roles within the nucleus?	11 Nov 25	17 Nov 25
10	KOMAL	Explore the differences between microevolutionary changes and macroevolutionary patterns.	21 Oct 25	27 Oct 25	Investigate the various adaptations of helminths that allow them to live as parasites.	28 Oct 25	3 Nov 25	Explain the different conformations of nucleic acids, including A-, B-, and Z-DNA.	4 Nov 25	10 Nov 25	Discuss the types, structure, chemical composition, and functions of chromosomes. How do these contribute to inheritance and gene expression?	11 Nov 25	17 Nov 25
11	KRITIKA	Analyze case studies of adaptive radiation, focusing on the diversification of species in new environments	21 Oct 25	27 Oct 25	Study the significance of segmentation in annelids and how it contributes to movement and other functions.	28 Oct 25	3 Nov 25	Discuss the role of tRNA and micro-RNA in gene expression and regulation.	4 Nov 25	10 Nov 25	What is the cytoskeleton? Describe the structure and functions of microtubules, actin filaments (microfilaments), and intermediate filaments.	11 Nov 25	17 Nov 25
12	MANSI	Study the fossilization process and its significance in understanding evolutionary history.	21 Oct 25	27 Oct 25	Examine the evolution and function of excretory systems in different annelid classes	28 Oct 25	3 Nov 25	What are the principles of enzyme catalysis?	4 Nov 25	10 Nov 25	Compare the structure and function of cilia and flagella. How do they differ in prokaryotes and eukaryotes?	11 Nov 25	17 Nov 25
13	MANU	Trace the evolutionary history of humans using fossil evidence and genetic data.	21 Oct 25	27 Oct 25	Analyze the role of the exoskeleton in arthropods and how it contributes to their success.	28 Oct 25	3 Nov 25	Describe enzyme kinetics and the significance of the Michaelis-Menten equation.	4 Nov 25	10 Nov 25	Discuss the fine structure of DNA and the key processes involved in DNA replication. What mechanisms exist for DNA repair?	11 Nov 25	17 Nov 25
14	NEERAJ	Discuss how abiotic and biotic factors drive the evolutionary process.	21 Oct 25	27 Oct 25	Explore how crustaceans breathe, focusing on the gills and other respiratory adaptations.	28 Oct 25	3 Nov 25	Explain the mechanisms of enzyme regulation.	4 Nov 25	10 Nov 25	Explain the processes of transcription and post-transcriptional modifications in eukaryotic cells. How do they differ from prokaryotic transcription?	11 Nov 25	17 Nov 25
15	NISHU	Critically evaluate the major theories of organic evolution (Lamarckism, Darwinism, Neo-Darwinism).	21 Oct 25	27 Oct 25	Study the different larval forms and their role in the life cycle and evolution of crustaceans.	28 Oct 25	3 Nov 25	What are isozymes, and what role do they play in metabolism?	4 Nov 25	10 Nov 25	Describe the translation process and the post-translational modifications that proteins undergo. Why are these modifications important?	11 Nov 25	17 Nov 25

16	PRAKARTI	Examine the factors that influence the geographic distribution of animals and their evolutionary implications.	21 Oct 25	27 Oct 25	Investigate how and why gastropods undergo torsion, and the subsequent process of detorsion.	28 Oct 25	3 Nov 25	Describe the catabolism of carbohydrates and its importance in energy production.	4 Nov 25	10 Nov 25	Explain the concept of the genetic code. How is it related to the processes of transcription and translation?	11 Nov 25	17 Nov 25
17	RASHIKA BHATI	Explore the role of isolating mechanisms in the process of speciation.	21 Oct 25	27 Oct 25	Discuss the unique skeletal structure of echinoderms and the role of larval forms in their evolutionary history.	28 Oct 25	3 Nov 25	Discuss the role of beta-oxidation in breaking down fatty acids.	4 Nov 25	10 Nov 25	What are transposons, and how do they contribute to genetic variability? Provide examples of their functions in prokaryotic and eukaryotic genomes.	11 Nov 25	17 Nov 25
18	SAKSHI GOYAL	Investigate examples of convergent evolution and its impact on evolutionary theory.	21 Oct 25	27 Oct 25	Explore the evolutionary relationships of hemichordates with both echinoderms and chordates.	28 Oct 25	3 Nov 25	Explain the anabolic processes of glycogenesis and gluconeogenesis.	4 Nov 25	10 Nov 25	Define cell adhesion molecules (CAMs). Discuss the difference between Ca ⁺⁺ -dependent and Ca ⁺⁺ -independent cell-cell adhesion.	11 Nov 25	17 Nov 25
19	SALONI SAXENA	Compare the processes of natural selection and sexual selection in shaping species.	21 Oct 25	27 Oct 25	Examine the evolutionary affinities of these minor non-coelomate phyla.	28 Oct 25	3 Nov 25	Describe the principles of biophysical chemistry related to pH and buffers.	4 Nov 25	10 Nov 25	What are cell junctions, and what roles do they play in maintaining tissue integrity and cell communication?	11 Nov 25	17 Nov 25
20	SHAKSHI SINGH	Assess the concept of molecular clocks and their utility in studying evolutionary divergence.	21 Oct 25	27 Oct 25	Investigate the affinities of chaetognaths and their place in the animal kingdom.	28 Oct 25	3 Nov 25	Discuss the principles of bioenergetics and oxidative phosphorylation.	4 Nov 25	10 Nov 25	Discuss the role of cell surface receptors in cell-cell signaling. How do second messenger systems function in transmitting signals within the cell?	11 Nov 25	17 Nov 25
21	VANSHIKA	Explore the mechanisms behind gene divergence and the evolution of novel proteins and genes.	21 Oct 25	27 Oct 25	Analyze the evolutionary position and characteristics of these minor coelomate phyla.	28 Oct 25	3 Nov 25	What is the role of biological energy transducers in cellular metabolism?	4 Nov 25	10 Nov 25	Explain the kinase signaling pathways and their role in signal transduction from the plasma membrane to the nucleus. How do these pathways regulate gene expression?	11 Nov 25	17 Nov 25

Prof. (Dr.) Anita Rani Rathore
Principal

Prof. (Dr.) Dinesh C. Sharma
HOD-Zoology