Name:

Enrolment No:

UPES

End Semester Examination, May 2025

Course: B.Sc. Geology (H) **Semester: IV**

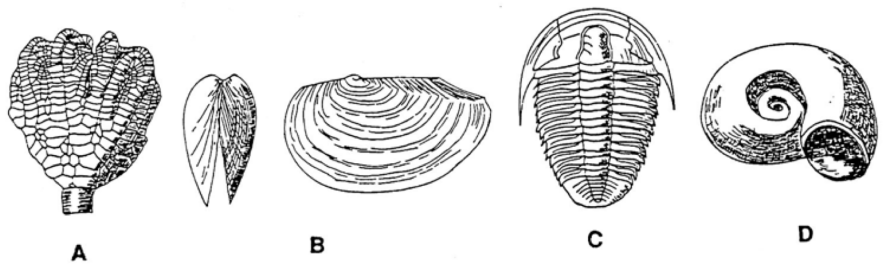
Program: Paleontology **Time : 03 hrs.**

Course Code: PEGS2058 **Max. Marks: 100**

Instructions: Draw diagrams whenever necessary.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q1	Define fossils and describe two major types.	**4**	**CO1**
Q2	Explain four features that differentiate bivalves from brachiopods.	**4**	**CO1**
Q3	Describe two adaptations of cephalopods for active predation.	**4**	**CO2**
Q4	Explain the role of the siphuncle in nautiloids.	**4**	**CO2**
Q5	Explain any two fossil preservation modes.	**4**	**CO1**
	SECTION B **(4Qx10M= 40 Marks)**		
Q6	Compare brachiopods and bivalves in terms of morphology, lifestyle, and paleoecology.	**10**	**CO2**
Q7	Illustrate and label the internal shell structure of a nautiloid. Explain how it functions in buoyancy.	**10**	**CO3**
Q8	Explain the adaptive significance of shell morphology in cephalopods through geological time.	**10**	**CO2**
Q9	Describe the mode of fossil preservation of dinosaurs. Discuss how do different modes contribute to our understanding of their biology	**7+3=10**	**CO4**
	OR		
Q10	Draw a chart with fossil assemblages found in the Kutch Basin and explain how they reflect changes in depositional environments during the Mesozoic era. Include examples of key fossil groups and discuss what they indicate about paleoecology and paleogeography.	**10**	**CO4**
	SECTION-C **(2Qx20M=40 Marks)**		

Q11	Evaluate the importance of fossil evidence in reconstructing the evolutionary history of life. Use examples from corals, trilobites, and cephalopods.	**20**	**CO3**
	OR		
Q12	Illustrate fossil types (with examples) to changing marine environments (e.g., fluvial, shelf, lagoon, reef).	**20**	**CO3**
Q13	**Case study:** When discussing the **mineral skeletons** of animals or plants, it is informative to consider not only the composition but also the **number of parts** that make up these structures. For instance, the **human skeleton** consists of **206 bones**, forming an intricate internal framework for support, movement, and protection. In contrast, a **snail** has a **single mineralized shell**, serving both as a home and a defensive barrier. The diagram below presents a range of fossil and extant organisms, each displaying **unique skeletal architectures** with varying numbers of parts. These skeletal features not only highlight **evolutionary adaptations** but also provide critical clues to the organisms' roles in ancient ecosystems and their **geological time frames**. Identify the following and elaborate their morphology, geological ages.  	**20**	**CO4**