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School of Basic Sciences
Bachelor of Science Honours in Chemistry
Semester End Examination - May 2024

Duration : 180 Minutes
Max Marks : 100

Sem VI - P1UE601T - Evolutionary and Developmental Biology

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Define the convergent evolution? K1 (2)
- 2) Give an example of convergent evolution and the analogous structures it produces. K2 (4)
- 3) Explore the significance of cleavage patterns during embryonic development, and how they dictate the organization of cells K2 (6)
- 4) Assess the significance of the Hardy-Weinberg law of equilibrium in understanding the forces that maintain genetic stability within populations. K3 (9)
- 5) Assess the mechanisms that lead to balanced polymorphism and how it can provide a selective advantage to a population. K3 (9)
- 6) Discuss & Illustrate the process of organogenesis, focusing on the formation of specific organs and their subsequent integration into functional organ systems. K5 (10)
- 7) Describe the significance of stem cells in development, tissue repair, and regeneration, along with their potential therapeutic applications. K4 (12)
- 8) How does diversifying selection contribute to the variation of traits within a population? K5 (15)
- 9) Discuss how does morphology and comparative anatomy (tectology) provide evidence for organic evolution? K5 (15)
- 10) Compare and contrast the processes of cleavage and gastrulation in early embryogenesis, K6 (18)