

PGDW BIOLOGY Semester - 2 Examination

MAY-2025

Advance tools and Techniques (LEVEL-2)

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions in Section A are compulsory.
2. All questions in Section B are compulsory (Each question has an OR choice).
3. In Section C, attempt any 3 questions.
4. Figures to the right indicate marks.

Section A Give Short Answer of the following Questions (3 Marks Each) [15]

1. Define zoonotic diseases giving two examples.
2. Why monitoring of disease dynamics important in wildlife conservation?
3. What is the importance of ethical guidelines in conservation genetics?
4. What is the difference between R and RStudio?
5. What does AIC stand for and what does it measure?

Section B Give Medium Answer of the following Questions (5 Marks Each) [25]

6. (a) Explain the steps involved in recognizing, recording, and reporting common wildlife diseases.

OR

- (b) Write a short note on Indigenous rights and the use of genetic resources.
7. (a) What is bioaccumulation? Briefly discuss its impact on wildlife health with an example.

OR

- (b) How does Multimodel Inference (MMI) differ from Single Model Inference?
8. (a) What are zoonotic diseases? Discuss any two methods of managing zoonotic disease risks.

OR

- (b) Explain how variables are created and used in R with example.
9. (a) What are the major steps involved in DNA extraction and preservation for wildlife studies?

OR

- (b) Describe the layout of RStudio and the purpose of each of its four panes.
10. (a) Describe the role of vaccination in controlling diseases affecting wildlife and livestock health.

OR

- (b) Explain molecular and genetic tools to understand species distribution?

Section C Give Long Answer of the following Questions (10 Marks Each, Attempt Any 3) [30]

11. Discuss the dispersal of zoonotic diseases and explain how disease dynamics are monitored in wildlife populations.
12. Explain Nagoya protocol and add a note on indigenous rights.
13. Discuss the applications of R and RStudio in ecological research.
14. Why does ecologist use models like GLM or GAM? Explain with example.
15. Analyse the effect of drug use on wildlife health and survival, supporting your answer with relevant case studies.
