

Reg. No .....

Name .....

26P241

**M.Sc. DEGREE END SEMESTER EXAMINATION - APRIL 2026**

**SEMESTER 2 : ZOOLOGY**

**COURSE : 24P2ZOOT07 : DEVELOPMENTAL BIOLOGY**

*(For Regular 2025 Admission and Improvement/Supplementary 2024 Admission)*

Time : Three Hours

Max. Weights: 30

**PART A**

**Answer any 8 questions**

**Weight: 1**

1. What is the significance of Corpora allata? (An)
2. Describe Holometabolus metamorphosis. (An)
3. What is the difference between a unipotent and an oligopotent stem cell? (U)
4. Briefly explain gametogenesis. (An)
5. Define Zygotic genes. (R)
6. Explain ICZI. (An)
7. Briefly explain Mesoderm signaling. (A)
8. Mention the role of Vitamin A as a teratogen. (An)
9. Discuss the significance of axis formation in patterning of the embryonic body. (An)
10. Define syncytial blastoderm . (R)

**(1 x 8 = 8)**

**PART B**

**Answer any 6 questions**

**Weights: 2**

11. Describe the Hedgehog pathway in vertebrates. (An)
12. Brief on germ cell determination and germ cell migration in mammals. (An)
13. Write about the molecular process that allows Drosophila to have alternate engrailed and wingless expression. (E)
14. Explain the role of stem cells in therapeutic cloning. (U)
15. Comment on the merits and demerits of IVF. (E)
16. Write a brief note on Drosophila early cleavage. (An)
17. Explain how alcohol, pathogens and heavy metals act as teratogens. (An)
18. How ecdysone regulate insect metamorphosis? (An)

**(2 x 6 = 12)**

**PART C**

**Answer any 2 questions**

**Weights: 5**

19. How Spemann reached the conclusion that an organizer is working in the early development of a vertebrate? (A)
20. Explain the role of calcium in fertilization and development of embryo. (An)
21. Write an essay on the drosophila dorsal ventral axis specification. (E)
22. What is regeneration? Enumerate different types of regeneration in animals. (U)

**(5 x 2 = 10)**

### OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
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Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;