QP CODE: 26022448

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Reg No : .....

Name : .....

M Sc DEGREE (CSS) EXAMINATION MAY 2026

Second Semester

M Sc ZOOLOGY

CORE COURSE - ZL010202 - DEVELOPMENTAL BIOLOGY

2019 ADMISSION ONWARDS

9C2A9D33

Time: 3 Hours Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. What is regulative embryo and explain the type of specification involved?
2. What is Reciprocal induction?
3. Explain differentiation.
4. What will happen if a Calcium chelating agent is injected into sea urchin?
5. Write a note on Kinesin.
6. Describe the contribution of Spemann and Mangold to developmental biology.
7. Describe the experiments by Peter Nieuwkoop that led to the discovery of cells that induced the organizer.
8. What is the significance of metamorphosis in insects.
9. Explain Transdifferentiation.
10. What are embryonic stem cells?

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Write a note on genomic imprinting explaining the inheritance patterns of Prader-Willi and Angelman syndrome.
12. Describe the structure of a single egg cell chamber in a *Drosophila* ovary with suitable diagram.

13. Describe in detail the Hox code hypothesis.
14. The inhibition of BMPs helps in the induction of neural ectoderm. Explain how.
15. Describe SMAD pathway .
16. Explain metaplasia.
17. Explain Wolffian Regeneration with suitable example.
18. List out the various types of environmental oestrogens and their toxic effcts

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. What is genetic equivalence? Explain in detail somatic cell nuclear transfer with the help of an illustrated example.
20. Describe in detail the dorsal ventral patterning in *Drosophila* with suitable diagrams.
21. Describe the molecular basis of mesoderm induction with experimental evidences.
22. Write an essay on different families of paracrine factors and their importance in development.

(2×5=10 weightage)