

(Pages : 3)

S – 6857

Reg. No. :

Name :

Third Semester M.Sc. Degree Examination, February 2024

Zoology

ZO 233 : IMMUNOLOGY AND DEVELOPMENTAL BIOLOGY

(2013 Admission Onwards)

Time : 3 Hours

Max. Marks : 75

I. Write brief notes on **any ten** of the following, each in a paragraph. **Each** question carries **2** marks.

1. Haptens
2. Fertilizin
3. Auto immune diseases
4. Parthogenesis
5. T cells
6. Niewkoop centre
7. Stem cells
8. Differential gene expression
9. Gonochorism
10. Genomic equivalence
11. Primary lymphoid organ

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12. Centrolecithal egg
13. BMP inhibitors
14. Totipotency
15. Monoclonal antibody

(10 × 2 = 20 Marks)

II. Answer any **six** of the following, each not exceeding a page. **Each** question carries **4** marks.

16. What are the factors affecting antigenicity?
17. Give an account of Hox cluster genes of vertebrates.
18. What are adjuvants? How adjuvants enhance immunogenicity?
19. Explain in vitro fertilization and embryo transfer.
20. What is embryonic induction? Give examples.
21. Explain complement system.
22. What is polyspermy? How it is prevented?
23. Explain the genetic basis of antibody diversity.
24. Describe mammalian cloning.
25. Explain clonal selection theory.

(6 × 4 = 24 Marks)

III. Write short essays not exceeding **2** pages on any **three** of the following. **Each** question carries **7** marks.

26. Explain the process of embryonic axis formation in amphibia.
27. Give an account on types of immunity.



28. Explain the major events in fertilization.
29. Give an account on immune cells.
30. Explain the early development of *Drosophila*.

(3 × 7 = 21 Marks)

IV. Write an essay on any **one** of the following, not exceeding **4** pages. The question carries **10** marks.

31. Write an account of Major Histocompatibility Complex and its role in transplantation.
32. Explain gene action in development in *Drosophila*.

(1 × 10 = 10 Marks)

