

Reg. No. :

Name :

Third Semester M.Sc. Degree Examination, February 2021

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. Macrophages
2. Interferons
3. Xenograft
4. Composition of Lymph
5. Mast Cells
6. Radio immuno assay
7. Acquired Immunity
8. Nieuwkoop centre
9. Pair rule genes
10. Primary organizer

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11. Germ plasm theory
12. Hermaphroditism
13. In vitro fertilization
14. Mid blastula transition
15. Poly spermy

(10 × 2 = 20 Marks)

II. Answer **any six** of the following. **Each** question carries **4** marks.

16. Provide a brief note on cytosolic and endosolic pathways of antigen processing.
17. Comment on Epitopes and Haptens.
18. Role of adjuvants in enhancing immunogenicity.
19. Describe the structure of IgG.
20. Comment on Immune Complex diseases.
21. Write short notes on parthenogenesis.
22. Comment on Hemeobox concept.
23. Explain differential gene expression.
24. Give an account of critical reaction.
25. Comment on Radial Holoblastic cleavage.

(6 × 4 = 24 Marks)

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

26. Comment on General features of complement system.
27. Explain different types of immunity.



28. Describe medically assisted human reproductive technologies.

29. Describe early development of Caenorhabditis elegans.

30. Comment on medical application of stem cells.

(3 × 7 = 21 Marks)

IV. Write an essays on **any one** of the following not exceeding **4** pages.
Each question carries **10** marks.

31. Explain defects in Immune mechanism and give a brief account of major auto immune diseases.

32. Comment on major biochemical and cytoplasmic changes during fertilization.

(1 × 10 = 10 Marks)

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