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TRIVANDRUM

Sixth Semester B.Sc. Degree Examination, April 2022

First Degree Programme under CBCSS

Zoology

Core Course IX

ZO 1642 : DEVELOPMENTAL BIOLOGY AND EXPERIMENTAL EMBRYOLOGY

(2019 Admission)

Time : 3 Hours Max. Marks : 80

I. Answer the following questions. (In **one** or **two** sentences. **1** mark each)

1. What is pre formation theory?
2. What is a telolecithal egg?
3. Comment on antrum.
4. Define spermiogenesis.
5. What is autofertilisation?
6. What are blastomeres?
7. What is cytogeny?
8. Comment on Involution
9. What is chorio allantoic placenta?
10. What is embryonic induction?

(10 × 1 = 10 Marks)

P.T.O.

II. Answer any **eight** of the following (Not to exceed **one** paragraph) Each carries **2** marks.

11. Briefly describe the recapitulation theory.
12. Explain germplasm theory .
13. Comment on the different phases in spermatogenesis?
14. Differentiate between mosaic and regulative egg.
15. Briefly describe the features of a centolecithal egg.
16. Comment on cortical rotation and its significance.
17. What is amphimixis?
18. Explain meroblasic cleavage with a diagram.
19. Comment on discoblastula with the help of a diagram.
20. What is infiltration?
21. Give a brief account on triploblastic condition.
22. Comment on hox genes.
23. What is blastocyst?
24. What is fallopian tube?
25. Describe organogeny in frog.
26. Comment on ultra sound scanning.

(8 × 2 = 16 Marks)

III. Answer any **six** of the following. (Not to exceed **120** words) Each carries **4** marks.

27. Explain the structure of a sperm with the help of a diagram.
28. Describe fertilizin-antifertilizin reaction with the help of a diagram.

29. Give an account on the influence of yolk on cleavage.

30. What are the various methods adopted for constructing fate maps?

31. Give an account on morphogenetic movements and differentiate epiboly and emboly.

32. Explain the 24 hour chick embryo with the help of a diagram.

33. What is teratology? Discuss the impact of drugs and chemicals on development.

34. Give an account on nuclear transplantation experiments.

35. Comment on test tube babies.

36. Give an account on hormonal control of amphibian metamorphosis.

37. Write notes on sex determination methods.

38. Comment on foetal membranes in humans.

(6 × 4 = 24 Marks)

IV. Answer any **two** of the following. Each carries **15** marks.

39. Write an essay on Oogenesis.

40. Give an account of a typical egg and describe the origin and significance of polarity.

41. Describe various types of parthenogenesis.

42. Define cleavage Describe the various planes and patterns of cleavage.

43. Give an account on cell differentiation and the potency of embryonic cells.

44. Write an essay on stem cell research and therapy.

(2 × 15 = 30 Marks
