

Reg. No. :

Name :

Sixth Semester B.Sc. Degree Examination, April 2022**First Degree Programme under CBCSS****Zoology****Core Course IX****ZO 1641 : DEVELOPMENTAL BIOLOGY AND
EXPERIMENTAL EMBRYOLOGY****(2018 Admission)**

Time : 3 Hours

Max. Marks : 80

SECTION – A

- I. Answer **all** the questions in a word or in **one** to **two** sentences. **Each** question carries **1** mark.
1. Germplasm theory
 2. Coeloblastula
 3. Invagination
 4. Polocyte
 5. Pleuripotency
 6. Macrolecithal egg
 7. Hensen's node

P.T.O.

8. Morula
9. Secondary egg membranes
10. Gray crescent

(10 × 1 = 10 Marks)

SECTION – B

- II. Answer **any eight** questions. **Each** question carries **2** marks. Answer not to exceed **one** paragraph.
11. Mention the role of hormones in parturition and lactation.
 12. Explain ultrasound scanning.
 13. Write the difference between holoblastic and meroblastic cleavage.
 14. Write a note on polarity of egg.
 15. Distinguish between primary and secondary egg membranes.
 16. Briefly explain chorionic villus sampling.
 17. What are homeotic genes?
 18. What is meant by capacitation?
 19. Define recapitulation theory.
 20. Sketch and label the fate map of amphioxus.
 21. Mention the role of autoimmunization in teratogenesis.
 22. What is meant by embryonic induction.
 23. Distinguish stereoblastula and coeloblastula.

24. What is AFP estimation?
25. What are test tube babies?
26. Explain superficial cleavage. Give an example.

(8 × 2 = 16 Marks)

SECTION – C

III. Answer **any six** questions. **Each** question carries **4** marks. Answer not to exceed **120** words.

27. Describe cell lineage in Planocera.
28. Explain the major steps in Oogenesis.
29. Classify eggs based on the distribution of yolk.
30. Briefly explain the mechanism of neural tube formation in frog.
31. Explain the nuclear transplantation experiment in amphibians.
32. Classify placenta based on the nature of contact.
33. Describe the development of eye in frog.
34. Explain the salient features of 24 hours chick embryo.
35. What are stem cells? Briefly describe about different types of stem cells.
36. Explain different types of parthenogenesis.
37. Describe various techniques used in the construction of fate map.
38. Explain different patterns of cleavage.

(6 × 4 = 24 Marks)

SECTION – D

- IV. Answer **any two** questions. **Each** question carries **15** marks. Answer as long essay type.
39. Write an essay on morphogenetic movements.
40. Explain the major events in the early development of Amphioxus.
41. What are extra embryonic membranes? Briefly describe the development and functions of extra embryonic membranes.
42. Write an essay on metamorphosis in frog.
43. Explain Spemann's constriction experiments.
44. Describe Spermatogenesis? Sketch and label mammalian spermatozoa.

(2 × 15 = 30 Marks)
