



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 6th Semester Examination, 2023

ZOOACOR13T-ZOOLOGY (CC13)

DEVELOPMENTAL BIOLOGY

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.
All symbols are of usual significance.*

1. Answer any **eight** questions from the following: 2×8 = 16
- (a) Make distinction between ingression and involution.
 - (b) Write the differences between totipotent and pluripotent stem cell.
 - (c) Name two placental hormones and their functions.
 - (d) Define telolecithal and centrolecithal egg with examples.
 - (e) What is sperm lysin? What is its function?
 - (f) What is vitelline envelope? State its function.
 - (g) What is Amniocentesis?
 - (h) What is ovarian hyperstimulation syndrome?
 - (i) What is secondary organiser? Give an example.
 - (j) What is Nieuwkoop centre?
 - (k) State the function of yolk sac.
 - (l) What do you understand by teratogenesis? Give an example.
2. Answer any **three** questions from the following: 3×3 = 9
- (a) State the advantages and disadvantages of IVF procedure in humans. 3
 - (b) Draw a labelled diagram of the ultrastructure of mammalian sperm. 1+2
 - (c) What do you understand by slow block to polyspermy during fertilization? 3
 - (d) State the functions of placenta. 3
 - (e) Write the names and functions of extraembryonic membranes in chick. 3
3. Answer any **three** questions from the following: 5×3 = 15
- (a) "The development of eye in chick is a case of successive induction" — Explain briefly. 5
 - (b) Define regeneration. Describe the four major ways of regeneration. 1+4
 - (c) What are the different cleavage patterns on the basis of yolk present in the egg? Define Balfour's law of cleavage. 3+2
 - (d) State the significant differences observed during the formation of gastrula in frog and chick. 5
 - (e) Describe the role of primary organiser in the light of Spemann-Mangold experiment. 5

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