



Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with A++ Grade by NAAC. Recognised by UGC under Section 12B
Coimbatore - 641 043, Tamil Nadu, India
Continuous Internal Assessment I August, 2025
I Semester

Class : I UG
Branch : Zoology

Time : 2 Hours
Max. Marks : 60

23BZOC02 DEVELOPMENTAL BIOLOGY AND EVOLUTION

Course Outcomes:

CO1: Understand the development of the egg to embryo and adult through cell division, differentiation and morphogenesis.

CO2: Realise the expressions and functions of gene networks in controlling the molecular changes and brings out variation.

CO3: Explore the relevance of developmental biology in medicine and related disorders.

CO4: Know the past and present scenario of research in developmental biology and evolution

CO5: Examine the evolutionary history of the taxa based on developmental affinities

Part A

6 x 1 = 6

Choose the Correct Answer

1. Spermatogonia undergo a growth phase to become
a) Primary Spermatocyte b) Secondary Spermatocyte
c) Spermatozoa d) Spermatid CO1 K1
2. Anti-fertilizin is secreted by
a) Sperm b) Ovum c) Spermatogonia d) Uterus CO2 K1
3. ICSI stands for
a) Intra cytoplasmic sperm injection b) Inter cytoplasmic sperm implant
c) Inter cytosolic sperm implant d) Intrauterine sperm injection CO1 K2
4. How many cleavages are completed in the 16-celled stage of an egg?
a) 12 b) 8 c) 4 d) 3 CO2 K2
5. Which germ layer gives rise to the digestive tract?
a) Mesoderm b) Endoderm c) Epiderm d) Ectoderm CO2 K1
6. Which extra embryonic membrane in humans prevents desiccation of the embryo inside the uterus?
a) Amnion b) Chorion c) allantois d) yolk sac CO2 K1

Part B

3 x 6 = 18

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 7.a Differentiate the spermatogenesis and Oogenesis process. CO1 K1
(or)
- 7.b Explain the block of polyspermy during the fertilization CO1 K2
- 8.a Describe about the process of GIFT. CO1 K3
(or)
- 8.b Describe the direct and indirect development. CO2 K2
9. a Explain the planes of cleavage. CO2 K3
(or)
- 9.b Give an account on the metamorphosis of insects. CO3 K2

Part C

3 x 12 = 36

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 10.a Explain the biochemical changes in the gametes after fertilization with diagrams CO1 K3
(or)
- 10.b Differentiate between sexual and asexual forms of reproduction with diagrams. CO1 K4
- 11.a Explain the role of fate maps in understanding embryonic development and their fate mapping techniques CO1 K3
(or)
- 11.b Write about the various the morphogenetic movements in embryo development. CO2 K2
12. a Describe the organogenesis during the embryo development. CO2 K2
(or)
- 12.b Give an account on the placenta types structure and function. CO3 K3