



## 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

### Master's Degree Examination – June / July 2021

#### II Semester

Class : I PG  
Major : Zoology

Time : 3 Hours  
Max. Marks: 100

#### 20MZOC09 Developmental Zoology

##### Part A

10 x 1 = 10

##### Choose the Correct Answer

1. The formation of polar bodies occur during \_\_\_\_\_ **CO1K1**  
a. Spermatogenesis      b. Spermateleosis  
c. Gamtogenesis      d. Oogenesis
2. The process of formation of haploid female gamete is known as \_\_\_\_\_ **CO1K1**  
a. Implantation      b. Spermatogenesis  
c. Gamtogenesis      d. Oogenesis
3. Cleavage produces a solid mass of cells called \_\_\_\_\_ **CO2K1**  
a. Blastula      b. Gastrula  
c. Neurogenesis      d. Morula
4. The cavity formed during the process of gastrulation is called \_\_\_\_\_ **CO2K1**  
a. Blastocoel      b. Archenteron  
c. Sub-germinal cavity      d. Blastoderm
5. Cell survival and reproduction are dependent on \_\_\_\_\_ **CO4K1**  
a. Cytoplasm      b. Nucleus  
c. Mitochondria      d. Ribosomes
6. Cleavage is inhibited by the drug called \_\_\_\_\_ **CO2K1**  
a. Cytochalasin B      b. Cytochalasin D  
c. Clindamycin      d. Ciprofloxacin.
7. The tissue on which a morphogen of inductor acts is known as \_\_\_\_\_ tissue. **CO3K1**  
a. Connective      b. Muscle  
c. Responsive      d. Epithelial
8. In bone marrow an undifferentiated stem cell receive a stimulus and direct it towards erythrocytic series called \_\_\_\_\_ **CO4K1**  
a. Induction      b. Competence  
c. Differentiation      d. Metamorphosis
9. The process of transformation of a larva into an adult is called \_\_\_\_\_ **CO4K1**  
a. Regeneration      b. Induction  
c. Metamorphosis      d. Transduction
10. ----- is an external light source inserted through incision to observe the ovaries. **CO5K1**  
a. Kaleidoscope      b. Microscope  
c. Telescope      d. Laproscope

**Part B**

**5 x 6 = 30**

**Answer ALL questions**

**Each answer should not exceed 400 words or two pages**

- 11.a. Infer the structure of sperm and its functions. **CO1K4**  
(or)
- 11.b. With a neat sketch explain the formation of egg membrane. **CO1K3**
- 12.a. Explain the role of fertilizin and anti-fertilizin. Add a note on its functions. **CO2K3**  
(or)
- 12.b. What are the changes that occur at the morphological and biochemical levels during gastrulation? **CO2K3**
- 13.a. Discuss the serial nuclear transplantation experiment. **CO3K2**  
(or)
- 13.b. Write an essay on the concept of cytoplasmic determinants. **CO3K3**
- 14.a. Categorize the types of embryonic inductions. **CO4K4**  
(or)
- 14.b. Give an account on competence. **CO4K2**
- 15.a. Briefly write the series of changes that occurs in the endometrium of a non- pregnant female. **CO5K3**  
(or)
- 15.b. Experiment the regeneration process in the invertebrate animals. **CO5K3**

**Part C**

**5 x 12 = 60**

**Answer ALL questions**

**Each answer should not exceed 800 words or three pages**

- 16.a. Show the origin and determination of primordial germ cells in various animal groups. **CO1K3**  
(or)
- 16.b. Distinguish spermatogenesis with oogenesis. **CO1K2**
- 17.a. Describe with well illustrated diagram the major events that occur during the process of fertilization. **CO2K2**  
(or)
- 17.b. Visualize the patterns of cleavage. **CO2K1**
- 18.a. Record the morphological evidences for nuclear changes during development. **CO3K1**  
(or)
- 18.b. "Cytoplasm controls the activities of nucleus". Justify this statement by giving suitable examples. **CO3K6**
- 19.a. Give an account of discovery, structure and function of neural induction in vertebrates. **CO3K2**  
(or)
- 19.b. Comment on the stem cells and concept of determination. **CO4K4**
- 20.a. Trace the hormonal control of amphibian metamorphosis. **CO5K2**  
(or)
- 20.b. Explain the phenomenon "metaplasia" by citing examples from vertebrates and non- chordates. **CO5K3**

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