THE OPEN UNIVERSITY OF SRI LANKA

BSc /B Ed DEGREE PROGRAMMES – LEVEL 04
FINAL EXAMINATION – 2024/25

ZYU4302 – ANIMAL DEVELOPMENT

DATE: 25th November 2024 Time: 1.00 p.m. – 3.00 p.m.

Index No: .....

ANSWER QUESTION (1) AND ANY THREE (3) OF THE OTHER 5 QUESTIONS

ANSWERS TO QUESTION (1) SHOULD BE WRITTEN IN THE SPACES PROVIDED ON THE QUESTION PAPER.

ANSWERS OF QUESTIONS (2) – (6) SHOULD BE ILLUSTRATED WITH CLEARLY LABELLED DIAGRAMS, WHERE NECESSARY.

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1. Describe the process of oogenesis that occurs in female frogs. (80 marks)

   How does the process of oogenesis in mammals differ from that of frogs? (20 marks)

2. Explain how the sea urchin sperm are attracted towards the eggs and the mechanisms involved in fertilization of the egg. (100 marks)

3. (i) How does the single-layered blastoderm of chick embryo form a two-layered blastula? (25 marks)

   (ii) Describe the process of gastrulation occurring in chick embryo. (75 marks)

4. Outline the process of vertebrate eye formation and differentiation of lens. (80 marks)

   Considering the formation of eye as an example, explain primary, secondary and tertiary inductions taking place during organogenesis. (20 marks)

5. Explain the reproductive cloning technology process that was used for the creation of Dolly. (80 marks)

   Compare the reproductive cloning procedure used for creating Dolly with natural sexual reproduction and therapeutic cloning. (20 marks)

6. Write short notes on <u>any two</u> (2) of the following:

   (a) Cleavage of frog zygote

   (b) Metamorphosis of frog

   (c) Role of cytoskeleton in morphogenesis

   (d) Cell determination (50 marks per each)

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