(NO. OF PAGES: 2)

(FOR THE CANDIDATES ADMITTED **22UZY507**

DURING THE ACADEMIC YEAR 2022 ONLY) **REG.NO. :**

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : NOVEMBER- 2024

BSC ZOOLOGY **MAXIMUM MARKS: 50**

SEMESTER-V **TIME : 3 HOURS**

PAPER - III

22UZY507– DEVELOPMENTAL BIOLOGY

SECTION – A **10 X 1 = 10 MARK**

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. The acrosome of sperm is formed from_____

a) Mitochondria of spermatid b) Golgi complex of spermatid

c) Nucleus of spermatid d) Centrosome of spermatid

2. Epiboly is the process_____

a) A type of cell division

b) A process where cells move and spread to cover the embryo

c) A form of apoptosis

d) The process of gastrulation

3. Who proposed the cell lineage theory?

a)Rudolf Virchow b)Theodor Schwann c)Antoni van Leeuwenhoek d)Matthias Schleiden

4. In the complete metamorphosis, which of the following is the larval stage in insects?

a)Caterpillar b)Maggots c)Grubs d)All of them

5. What is the purpose of MOET in animal breeding?

a) Increase natural reproduction rates

b) Produce multiple offspring from high-quality females

c) Prevent animal cloning

d) Improve animal diet

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

6. Define parthenogenesis

7. Recall Exogastrulation

8. Breif cell lineage

9. Write the primary function of the organizer in embryonic development?

10. What are stem cells?

(CONTD …. 2)

SECTION – B (5 X 3 = 15 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Explain Spemann's experiment on the organizer

(OR)

b)Describe the basic steps involved in the mechanism of fertilization in animals.

12. a) Compare and contrast holoblastic and meroblastic cleavage.

(OR)

b)Elaborate a note on fate map in embryology

13 .a)Briefly explain the brain develops from the ectoderm in frogs.

(OR)

b)Narrate the development of the chick embryo at 72 hours of incubation.

14. a)Write a detailed account on the hormonal control of metamorphosis in amphibians.

(OR)

b)Discuss the evolutionary significance of neoteny with examples.

15. a)Summarize the GIFT technique and its significance

(OR)

b)Experiment with the techniques of embryonic sexing.

SECTION – C (5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K4 (Or) K5)

16. a)Analyse the process of oogenesis. **(K4)**

(or)

b)Categorize Parthenogenesis and explain natural and artificial Parthenogenesis **(K4)**

17. a)What is exo gastrulation? Explain its role in frog development **(K5)**

(or)

b)Relate the sigficanece of morphogenetic movements during development of frog. **(K5)**

18. a)Examine the role of the mesodermal orgin of the heart in frog. **(K4)**

(or)

b)Elucidate the development and significance of fetal membranes in chick embryos. **(K4)**

19. a)Classify the placentation in mammals based on fetal membranes and the distribution of villi. **(K5)**

(or)

b)Defend on the amphibian limb regeneration and the factors controlling the process. **(K5)**

20. a)Tthe process of IVF and its implications for treating infertility is a boon-Justify. **(K5)**

(or)

b)Appraist the nuclear transfer method for cloning animals and its significance. **(K5)**

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