REV-01
MSZ/37/42

2025/06

SET A

M.Sc. ZOOLOGY
SECOND SEMESTER
DEVELOPMENTAL BIOLOGY
MSZ-204

[USE OMR FOR OBJECTIVE PART]

Duration: 1.30 hrs. **Full Marks: 35**

Objective

Time: 15 min. **Marks: 10**

1X10=10

Choose the correct answer from the following:

1. In developmental biology, 'commitment' refers decision of a cell to-
   a. Follow a specific signal
   b. Follow a definite pathway
   c. Express a definite character
   d. All of the above

2. Adult stem cells are-
   a. Unipotent
   b. Multipotent
   c. Both a & b
   d. Totipotent

3. Which one of the following processes is involved in attachment of sperm to egg surface during fertilization?
   a. Acrosomal reaction
   b. Fertilizin-antifertilizin reaction
   c. Formation of fertilization membrane
   d. Activation of ovum

4. Which one of the following embryo shows meroblastic cleavage?
   a. Bird
   b. Amphioxus
   c. Placental mammal
   d. Marsupial

5. In spermatozoa, axial filament is formed from -
   a. Mitochondria
   b. Golgi bodies
   c. Centriole
   d. Nucleus

6. Regeneration is similar to.....
   a. Autotomy
   b. Differentiation
   c. Cleavage
   d. Division

7. Epimorphosis is regeneration through
   a. Repatterning of existing cells as seen in hydra
   b. Re- initiation of division in existing cells followed by patterning as occurs in amphibians such as newts
   c. Repatterning of existing cells as seen in amphibians
   d. Growth from remaining cells as seen in hydra

8. The formation of female gametes by parthenogenesis is called .....
   a. Arrhenotoky
   b. Thelytoky
   c. Discoidolotoky
   d. All of the above

9. Various chemical or chemical methods may trigger development of fertilized eggs. This is called.....
   a. Artificial parthenogenesis
   b. Natural parthenogenesis
   c. Nuclear parthenogenesis
   d. All of the above

10. Removal of thyroid rudiment at the tail bud stage results in ----------
   a. Giant tadpole
   b. Excitement
   c. Monster eggs
   d. Death

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(Descriptive)

Time : 1 hrs. 15 min. Marks : 25

[Answer question no.1 & any two (2) from the rest]

1. Discuss briefly about parthenogenesis in animals with suitable examples wherever necessary. 5

2. Mention the unique features of a blastula. Describe various types of blastula found in embryology. 2+8=10

3. Write about the methods of construction of fate map of embryonic cells. 10

4. Elucidate in detail about metamorphosis in animals with suitable examples wherever necessary. 10

5. Elucidate in detail about Regeneration in animals with suitable examples 10

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