REV-01
MSZ/106/111

2024/06

SET B

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

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1hr. 30 mins. **Full Marks: 35**

Objective

Time: 15 mins. **Marks: 10**

Choose the correct answer from the following: ***1×10=10***

1. Regeneration is similar to.....
   a. Autotomy
   b. Differentiation
   c. Cleavage
   d. All of the above

2. In *Caenorhabditis elegans* the self-fertilized eggs exit the body through.....
   a. Vulva
   b. Valve
   c. Blastula
   d. Cell

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

4. Various chemical or physical methods may trigger the development of fertilized eggs. This is called:
   a. Artificial parthenogenesis
   b. Natural Parthenogenesis
   c. Nuclear Parthenogenesis
   d. Cellular Parthenogenesis

5. Epimorphosis is regeneration through.....
   a. The repatterning of existing cells as seen in hydra
   b. The re initiation of division in existing cells, followed by patterning, as occurs in amphibians such as newts
   c. The repatterning of existing cells as seen in amphibians
   d. The re-initiation of embryonic growth from remaining cells as seen in Hydra

6. Establishment of 3 germinal layers is the characteristic features of:
   a. Zygote
   b. Morula
   c. Blastula
   d. Gastrula

7. Regenerative medicines are useful for:
   a. Protein synthesis
   b. Replacing damaged tissues
   c. Fate maping
   d. Gametogenesis

8. In which one of the following cell study, vital stain is used?
   a. Hemocytes
   b. Living cells of embryo
   c. Bone marrow
   d. Nerve impulse transmission

9. Which part of the sperm is essential for its motility?
   a. Head
   b. Middle piece
   c. Tail
   d. Golgi body

10. Who won Nobel Prize in 1935 for experiments on embryonic organizers?
   a. Vogt
   b. Spemann
   c. Spratt
   d. None of the above

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Descriptive

Time : 1 hr. 15 mins. **Marks : 25**

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

1. Define cleavage. Write the differences between Holoblastic and Meroblastic cleavage with examples. 1+4=5

2. Discuss briefly about regeneration in animals citing suitable examples. 10

   Or

   Discuss briefly about the formation of vulva in *C.elegans* with neat labelled sketches.

3. Elucidate in detail about the phenomenon of metamorphosis in vertebrates citing suitable examples. 10

   Or

   Elucidate in detail about Parthenogenesis in animals and its various types.

4. Describe the physico-chemical events take place during fertilization. Mention the importance of fertilization. 8+2=10

5. What is blastula? Write about the types of blastula found in embryonic life. 2+8=10

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