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(CBCS)

(6th Semester)

ZOOLOGY

TENTH PAPER

(Developmental Biology)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(SECTION : A—OBJECTIVE)

(Marks : 10)

Tick (✓) the correct answer in the brackets provided :

1×10=10

1. The egg yolk is distributed uniformly in

- (a) centrolecithal egg () (b) telolecithal egg ()
(c) isolecithal egg () (d) discoidal egg ()

2. Arrhenotokous refers to

- (a) haploid parthenogenesis ()
(b) diploid parthenogenesis ()
(c) incomplete parthenogenesis ()
(d) complete parthenogenesis ()

3. Archenteron or primitive gut is well-evident in

- (a) zygote () (b) blastula ()
(c) gastrula () (d) adult animal ()

4. Migration of individual cells from the surface into interior of embryo is termed as

- (a) invagination () (b) involution ()
(c) ingression () (d) delamination ()

5. The artificial marking methods in the construction of fate maps of amphibian were first discovered by
- (a) Vogt ()
 - (b) Waddington ()
 - (c) Spratt ()
 - (d) Hoota and Benzer ()
6. The single gradient system was proposed by
- (a) Ruinstorm ()
 - (b) C. M. Child ()
 - (c) Horstadius ()
 - (d) Kaltenbach ()
7. Juvenile hormone in insect is secreted by
- (a) cuticle ()
 - (b) rectal gland ()
 - (c) prothoracic gland ()
 - (d) corpora allata ()
8. The sequence of metamorphoses in insects is
- (a) ametabolous, paurometabolous, hemimetabolous, holometabolous ()
 - (b) paurometabolous, holometabolous, ametabolous, hemimetabolous ()
 - (c) hemimetabolous, ametabolous, holometabolous, paurometabolous ()
 - (d) holometabolous, paurometabolous, ametabolous, hemimetabolous ()
9. The type of regeneration found in higher animals is
- (a) morphallaxis ()
 - (b) epimorphosis ()
 - (c) heteromorphosis ()
 - (d) super regeneration ()
10. Humans have an average life span of 100 years that is set by a group of
- (a) growth genes ()
 - (b) terminator genes ()
 - (c) lethal genes ()
 - (d) death genes ()

(SECTION : B—SHORT ANSWER)

(Marks : 15)

Write notes on the following in 5 to 8 sentences each :

3×5=15

UNIT—I

1. Structure of spermatozoon

OR

2. Types of eggs

UNIT—II

3. Fate maps

OR

4. Amnion

UNIT—III

5. Organiser

OR

6. Invagination

UNIT—IV

7. Regeneration

OR

8. Ecdysone

UNIT—V

9. Down's syndrome

OR

10. Stem cell

(SECTION : C—DESCRIPTIVE)

(Marks : 50)

Answer the following questions :

10×5=50

UNIT—I

1. What is parthenogenesis? Describe the two types of parthenogenesis.

OR

2. Write down the different patterns of cleavage.

UNIT—II

3. Give an account on the mechanism of blastulation in amphibians.

OR

4. Describe the classification of placenta and their functions.

UNIT—III

5. Explain the different types of gradient systems with suitable evidences.

OR

6. What do you mean by morphogenetic fields? Discuss the characteristics.

UNIT—IV

7. Discuss the process of amphibian metamorphosis and their hormonal regulations.

OR

8. Explain the different Hox genes and their functions in *Drosophila*.

UNIT—V

9. Write a note on the genesis and environmental causes of teratogenesis.

OR

10. Discuss the concept of transgenesis.
