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(6th Semester)

ZOOLOGY

Paper : ZL–X

(Developmental Biology)

Full Marks : 55

Time : 2½ hours

(PART : A—OBJECTIVE)

(*Marks* : 20)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks* : 5)

Tick (✓) the correct answer in the brackets provided : 1×5=5

1. Parthenogenesis where individuals of either sexes may be produced is

(a) arrhenotoky ( )

(b) thelytoky ( )

(c) amphitoky ( )

(d) cyclitoky ( )

2. The type of placenta in human is

(a) monodiscoidal placenta ( )

(b) bidiscoidal placenta ( )

(c) diffuse placenta ( )

(d) zonary placenta ( )

3. Hormone responsible for the retention of juvenile characters is

(a) bursicon ( )

(b) ecdysone ( )

(c) neotenin ( )

(d) thoracotrophic hormone ( )

4. Formation of inside sheet by mass separation of layer of cells from an epithelium is called

(a) invagination ( )

(b) involution ( )

(c) ingression ( )

(d) delamination ( )

5. Thalidomide is a teratogen which causes

(a) Down's syndrome ( )

(b) anencephaly ( )

(c) cleft palate ( )

(d) phocomelia ( )

SECTION—B

(*Marks* : 15)

Write short notes on the following in not more than *5* to *8* sentences each : 3×5=15

1. Spiral cleavage

2. Fate maps

3. Epiboly

4. Holometabolic development in insects

5. Transgenesis

(PART : B—DESCRIPTIVE)

(*Marks* : 35)

The figures in the margin indicate full marks for the questions

1. What do you understand by *in vivo* and *in vitro* fertilizations? Explain the process involved in *in vivo* fertilization. 2+5=7

OR

Describe the different types of eggs with suitable diagrams. 7

2. Describe the blastulation process in frog. 7

OR

What are extra-embryonic membranes? Explain the extra-embryonic membranes in chick with their functions. 2+5=7

3. Explain the concept of organizer and induction giving suitable examples. 7

OR

What are morphogenetic fields? Explain the double-gradient theory. 2+5=7

4. Describe the process of metamorphosis and its hormonal regulation in amphibian. 7

OR

Explain the mechanism of regeneration in vertebrates. 7

5. Write a note on the concept of ageing. 7

OR

What are stem cells? Explain the different types of stem cells giving examples. 2+5=7

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