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3 (Sem-6/CBCS) ZOO HC 1

2024

ZOOLOGY

(Honours Core)

Paper : ZOO-HC-6016

(Developmental Biology)

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Choose the correct answer of the following :

1×7=7

(a) A/An _____ is released at the time of ovulation.

- (i) oogonium
- (ii) primary oocyte
- (iii) secondary oocyte
- (iv) ovum

Contd.

- (b) Which of the following are the basic categories of chemical signalling found in multicellular organism?
- (i) Paracrine signalling
 - (ii) Autocrine signalling
 - (iii) Endocrine signalling
 - (iv) All of the above
- (c) The type of cleavage, in which the first cleavage furrow divides zygote completely into two is called
- (i) holoblastic
 - (ii) meroblastic
 - (iii) equatorial
 - (iv) radial
- (d) In humans, the majority of the placenta is formed by
- (i) allantois
 - (ii) amnion
 - (iii) chorion
 - (iv) yolk sac
- (e) Regeneration of a limb or tail is an example of
- (i) epimorphosis
 - (ii) autotomy
 - (iii) compensatory hypertrophy
 - (iv) morphallaxis

- (f) The study of different aspects of ageing is known as
- (i) gerontology
 - (ii) gynaecology
 - (iii) odontology
 - (iv) chronology
- (g) _____ is the process by which stem cells divide to make more stem cells.
- (i) Self-renewal
 - (ii) Propagation
 - (iii) Thrombopoiesis
 - (iv) Migration

2. Write short notes on : 2×4=8

- (a) Meroblastic cleavage
- (b) Importance of amniocentesis
- (c) Blastocyst
- (d) Functions of placenta

3. Answer **any three** of the following : 5×3=15

- (a) Describe the process of asymmetric cell division.
- (b) Describe the process of early development of frog up to gastrulation with diagram.

- (c) Write a note on embryonic induction.
- (d) Describe the process of morphallaxis regeneration with example.
- (e) Write a note on the hormonal regulations of insect metamorphosis.
4. Describe the patterns of cleavage with diagram. $6+4=10$

Or

Describe the mechanism of fate map construction. Write the importance of fate map. $7+3=10$

5. What are different types of placenta? Write the characteristics of each of them with example and diagram. $3+7=10$

Or

Describe the mechanism of implantation in human with diagram. $8+2=10$

6. Describe the process of internal fertilization. Write a note on blocks to polyspermy. $7+3=10$

Or

What are the teratogenic agents? Give examples. Describe briefly their effects on embryonic development. $2+2+6=10$