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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 : $2 \times 4 = 8$

(a) Meroblastic cleavage

(b) Importance of amniocentesis

(c) Blastocyst

(d) Functions of placenta

3. Answer **any three** of the following :

$5 \times 3 = 15$

(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. $2+2+6=10$