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

(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) charion
(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
