2022

ZOOLOGY

(Honours)

Paper Code : XIII - A & B

[Development Biology and Teratology and Endocrinology and Reproductive Biology]

(New Syllabus)

Full Marks : 50 Time : Two Hours

Paper Code : XIII - A

(Marks : 10)

Choose the correct answer.

Each question carries 1 Mark.

1. The acrosome of sperm is derived from —
   (A) Nucleus
   (B) Golgi apparatus
   (C) Mitochondria
   (D) Centriole
2. Grey crescent is the area —
   (A) at the point of entry of sperm into ovum
   (B) just opposite to the point of entry of sperm into ovum
   (C) at the animal pole
   (D) at the vegetal pole
3. At which stage the oocyte is released from the ovary?
   (A) Oogonium
   (B) Primary oocyte
   (C) Secondary oocyte
   (D) Ovum

4. Morphogenetic movement takes place during formation of —

   (A) Morula

   (B) Blastula

   (C) Gastrula

   (D) Both (A) and (B)

5. Progesterone is secreted by —

   (A) Primary follicle

   (B) Secondary follicle

   (C) Graafian follicle

   (D) Corpus luteum

6. Which stage in estrous cycle is regarded as ‘heat period’?

   (A) Proestrus

   (B) Estrus

   (C) Metestrus

   (D) Diestrus

7. Juvenile hormone in insects is secreted by —

   (A) Prothoracic gland

   (B) Corpora cardiaca

   (C) Corpora allata

   (D) None of the above

8. This happens during spermatogenesis —

   (A) Meiosis

   (B) Mitosis

   (C) Meiosis & Mitosis

   (D) None of these

9. Eggs of Mammals are —

   (A) Alecithal

   (B) Centrolecithal.

   (C) Macrolecithal

   (D) Acetoalchoho

10. Somites are formed from —

(A) Ectoderm

(B) Mesoderm

(C) Endoderm

(D) None of these

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Paper Code : XIII - B

(Marks : 40)

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

Unit - 1 : Developmental Biology and Teratology

1. Answer any *two* questions : 4×2=8

   (a) Draw and describe the fate map of frog.

   (b) Classify the types of egg based on amount of yolk.

   (c) Differentiate spermatogenesis and oogenesis.

   (d) Write short note on in vitro fertilization.

2. Answer any *one* question : 12×1=12

   (a) Define cleavage. Describe the process of spermiogenesis with a proper diagram. Write the function of amnion and allantois. 2+(4+2)+4

   (b) Write short notes on : 6+6=12

      (i) Egg membranes

      (ii) Regeneration

   (c) Define Nieukwoop centre. Explain organizer concept. 2+10=12

Unit - 2 : Endocrinology and Reproductive Biology

3. Answer any *two* questions : 4×2=8

   (a) Differentiate estrous cycle and menstrual cycle.

   (b) Give an account on Graves' disease.

   (c) Draw and describe the structure of a Graafian follicle.

   (d) Classify hormones on the basis of chemical nature with examples.

4. Answer any *one* question : 12×1=12

   (a) Briefly discuss the feedback mechanism of hormonal action with proper example. Write about the steps involved in the synthesis of testosterone. 5+7=12

   (b) Describe the steps involved in thyroid hormone synthesis. Add a note on control mechanism of thyroid hormone synthesis. 8+4=12

   (c) Write notes on : 6+6=12

      (i) Hormonal regulation of calcium metabolism.

      (ii) Role of juvenile hormone in Insect metamorphosis.

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