

**B.Sc. (Part—I) (Semester—II) Examination**  
**2S : ZOOLOGY**  
**(Cell and Developmental Biology)**

Time : Three Hours]

[Maximum Marks : 80

**Note** :—(1) All questions are compulsory.

(2) Question No. 1 carries 8 marks and remaining SIX questions carry 12 marks each.

(3) Illustrate your answer with suitable diagrams wherever necessary.

1. (A) Fill in the blanks :—

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(i) The organelle that carries out protein synthesis is \_\_\_\_\_.

(ii) During \_\_\_\_\_ stage of cell division the chromosomes reaches the central or equatorial plate of the spindle.

(iii) The \_\_\_\_\_ placenta is also called as chorio vitelline placenta.

(iv) In chick, the cleavage is limited only to \_\_\_\_\_.

(B) Choose the correct alternative from the following :—

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(v) The cell organelle that provides an ultrastructural skeletal framework and gives mechanical support is \_\_\_\_\_.

(a) Endoplasmic reticulum

(b) Golgi complex

(c) Lysosome

(d) Ribosome

(vi) Formation of an ovum is called \_\_\_\_\_.

(a) Spermatogenesis

(b) Oogenesis

(c) Parthenogenesis

(d) Biogenesis

(vii) Respiratory enzymes are present in \_\_\_\_\_.

(a) Lysosome

(b) Ribosome

(c) Golgi complex

(d) Mitochondria

(viii) \_\_\_\_\_ prevents the entry of other spermatozoa after fertilization.

- (a) Acrosome tube (b) Acrosome granule  
(c) Fertilization membrane (d) Fertilization cone.

(C) Answer in **one** sentence :—

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(ix) What is cytokinesis ?

(x) Mention one important function of Allantois.

(xi) What is Telomere ?

(xii) In which type of cells meiosis take place ?

2. Describe the following :—

12

- (a) Eukaryotic cell (labelled diagram only)  
(b) Structure of Endoplasmic reticulum.  
(c) Functions of plasma membrane.

**OR**

- (d) Danieli and Davson model of plasma membrane.  
(e) Ultra structure of Prokaryotic cell.  
(f) Types of Endoplasmic reticulum.

3. Describe the following :—

12

- (g) Ultrastructure of Mitochondrion.  
(h) Types of ribosome.  
(i) Functions of Lysosome.

**OR**

- (j) Structure of Golgi Complex.  
(k) Polymorphism in Lysosome.  
(l) Functions of Ribosome.

4. Describe the structure and functions of Nucleus.

12

**OR**

Describe the General Organization of chromosome.

5. Describe the following :— 12
- (m) Anaphase of mitosis.
  - (n) Fertilizin-antifertilizin.
  - (o) Acrosome.

**OR**

- (p) Significance of Meiosis.
  - (q) Types of fertilization.
  - (r) Stages of spermatogenesis.
6. Describe the development of Amnion and Chorion in chick and give their significance. 12

**OR**

Describe the process of Coelom formation in Amphioxus.

7. Describe the following :— 12
- (s) Types of stem cells.
  - (t) Regeneration in vertebrates (one example).
  - (u) Functions of Placenta.

**OR**

- (v) Thelytoky.
- (w) Regeneration in invertebrates (one example).
- (x) Uses of stem cell.

