

AS-1385

**B.Sc. (Part—I) Semester—II Examination**

**ZOOLOGY**

**(Cell and Developmental Biology)**

Time : Three Hours]

[Maximum Marks : 80

**N.B. :—** (1) All questions are compulsory.

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

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

1. (A) Fill in the blanks :—

4×½=2

(i) Transport of a solute molecule against the concentration gradient is called \_\_\_\_\_ transport.

(ii) Acid Hydrolases are found in the organelle, called \_\_\_\_\_.

(iii) \_\_\_\_\_ is also called Reduction Division.

(iv) Nucleolar Organizer Regions (NOR) of chromosomes are involved in formation of the organelle called \_\_\_\_\_.

(B) Choose correct alternative from the following :—

2

(v) The sedimentation coefficients of the subunits of a eukaryotic ribosome are \_\_\_\_\_.

(a) 60 s and 40 s

(b) 50 s and 30 s

(c) 60 s and 30 s

(d) None of these

(vi) Which of the following is NOT a function of Endoplasmic Reticulum ?

(a) Detoxification

(b) Autophagy

(c) Glycosylation

(d) Steroid synthesis

(vii) Polytene chromosomes are formed by the process of \_\_\_\_\_.

- (a) Meiosis
- (b) Parthenogenesis
- (c) Endomitosis
- (d) All of these

(viii) Development of young one without fertilization is called \_\_\_\_\_.

- (a) Regeneration
- (b) Parthenogenesis
- (c) Placentation
- (d) Gametogenesis

(C) Answer in **ONE** sentence each :—

4

- (ix) Define fertilization.
- (x) What are stem cells ?
- (xi) What are cristae ?
- (xii) Who proposed the fluid-mosaic model of plasma membrane ?

2. Describe the following :—

12

- (a) Fluid mosaic model of plasma membrane
- (b) Types of endoplasmic reticulum
- (c) Functions of plasma membrane.

**OR**

- (d) Prokaryotic cell
- (e) Functions of endoplasmic reticulum
- (f) Unit membrane model.

3. Describe the following :—

12

- (g) Function of Golgi complex
- (h) Ultra structure of mitochondria
- (i) Structure of prokaryotic ribosome.

**OR**

- (j) Functions of lysosomes
- (k) Ultra structure of Golgi Complex
- (l) Functions of mitochondria.

4. Describe the structure of polytene chromosome and its significance. 12

**OR**

Describe the structure and functions of nucleus.

5. Attempt the following :— 12

(m) Any two subphases of prophase I of meiosis (Diagrams only)

(n) Significance of mitosis

(o) Acrosome reaction.

**OR**

(p) Fertilizin and Antifertilizin reaction

(q) Well labelled diagram of mature sperm

(r) Anaphase of mitosis.

6. Attempt the following :— 12

(s) Cleavage in development of frog

(t) Gastrulation of frog

(u) Cleavage in development of Amphioxus.

**OR**

(v) Allantois in chick

(w) Fate map of blastula of frog

(x) Primitive streak.

7. Describe types and uses of stem cells. 12

**OR**

What is Regeneration ? Describe regeneration in animals.

