(p) Cleavage in Amphioxus

(q) Fate map of frog

(r) Significance of extra embryonic membranes (any **two** membranes). 12

7. Explain the following :

(s) Yolk Sac Placenta

(t) Significance of Parthenogenesis

(u) Regeneration in vertebrates (**one** example).

OR

(v) Uses of stem cells

(w) Functions of Placenta (any **two**)

(x) Arrhenotoky Parthenogenesis. 12

AQ—659

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

2S : ZOOLOGY

(Cell & Developmental Biology)

Time—Three Hours] [Maximum Marks—80

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

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

(3) Draw neat labelled diagram wherever necessary.

1. (a) Fill in the blanks :

(i) Chromosomes have been classified into ____ and sex chromosomes.

(ii) During _____ stage the chromosomes are arranged at equatorial plate.

(iii) During _____ stage of respiration, glucose is broken down into pyruvic acid.

(iv) Fusion of male and female gametes forms ___.

2

(b) Choose the correct alternative from the following :

(v) _____ are the reproductive cells.

(a) Epithelial cells (b) Muscle cells

(c) Gametes (d) None of these

(vi) The term mitochondrion was coined by ____.

(a) Porter (b) Gorter and Grendel

(c) Benda (d) Camillo Golgi

(vii) Gametogenesis occurs in _____.

(a) bladder (b) blood

(c) gonads (d) none of these

(viii) During _____ stage of mitosis, two nuclei can be seen in a single cell.

(a) Metaphase (b) Prophase

(c) Telophase (d) Anaphase 2

(c) Answer in **one** sentence :

(ix) What is spermatogenesis ?

(x) What is cleavage ?

(xi) What is sperm ?

(xii) What is the main function of nucleolus ? 4

2. Explain the following :

(a) Functions of Plasma Membrane

(b) Types of Endoplasmic reticulum

(c) General organization of prokaryote cell.

OR

(d) Functions of Endoplasmic reticulum

(e) Fluid mosaic model of plasma membrane

(f) General organization of Eukaryotic cell. 12

3. Describe the Ultrastructure and functions of mitochondria.

OR

Describe the ultrastructure and functions of Golgi complex. 12

4. Explain the following :

(g) Functions of nucleus

(h) Structure of Lampbrush chromosome

(i) Centromere.

OR

(j) Nucleolus

(k) Structure of typical chromosome (Diagram only)

(l) Structure of Polytene chromosome. 12

5. Describe the process of mitosis and its significance.

OR

Describe the mechanism of fertilization. 12

6. Describe the following :

(m) Yolk Sac

(n) Blastulation in Frog

(o) Gastrulation in chick.

OR