AU–233

M.Sc. Semester—I (C.B.C.S. Scheme) Examination

ZOOLOGY

(Genes and Differentiation)

Paper—IV

Time : Three Hours] [Maximum Marks : 80

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

(2) All questions carry equal marks.

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

1. Give an account of the following :

(a) Characteristics of cell differentiation

(b) Types of cell specification

(c) Germ cell determination in nematodes

(d) Germ cell migration in birds. 16

OR

(e) Germ cell determination in amphibians

(f) Cell commitment

(g) Germ cell migration in mammals

(h) Germ cell determination in insects. 16

2. Give an account of the following :

(i) Establishment of left-right body axis in mammals.

(j) Dorsal-ventral body axis formation in *Drosophila*

(k) Anterior-posterior body axis formation in amphibia

(l) Left-right body axis formation in chick. 16

OR

(m) Dorsal-ventral body axis formation in amphibia

(n) Homeobox concept in different phylogenetic groups

(o) Anterior-posterior body axis formation in *Drosophila*.

(p) Left-right body axis formation in amphibia. 16

3. Describe surgical and hormonal methods of contraception. 16

OR

Describe malformation and disruption – teratogenic effects of xenobiotics. 16

4. Describe chromosomal and genetic basis of sex determination in mammals. 16

OR

Describe regeneration in vertebrates. 16

5. Give an account of the following :

(q) Stem cell markers

(r) Aplastic anemia

(s) Rebuilding the nervous system with stem cells

(t) Cord-blood stem cells and stem cell bank. 16

OR

(u) Congenital cytopenia

(v) Adult stem cells

(w) Stem cells and diabetes

(x) Properties of stem cells. 16