B.Sc. (Part–II) Semester–IV Examination

4S : ZOOLOGY

(Advanced Genetics and Animal Ecology)

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 answers with suitable diagrams wherever necessary.

1. (A) Fill in the blanks : 2

(i) Law of Independent assortment was explained by _____.

(ii) Trisomy of chromosome 18 results into _____ syndrome.

(iii) The animals, which cannot regulate their body temperature are _____ animals.

(iv) The Energy pyramid is always _____.

(B) Choose correct alternatives from the following : 2

(v) The alternative forms of genes are called as _____.

(a) alleles (b) phenotype

(c) genotype (d) gamete

(vi) The genes of different traits located on different loci on the same chromosome are called _____ genes.

(a) alleles (b) linked

(c) pleiomorphic (d) mutated

(vii) Amniocentesis and CVS is a _____ process.

(a) Invasive (b) Non-Invasive

(c) Confined (d) None of the above

(viii) Dormancy in animals during summer season is called _____.

(a) Hibernation (b) Aestivation

(c) Diapause (d) None of these

(C) Answer in one sentence : 4

(ix) Define lethal genes.

(x) What are gynandromorphs ?

(xi) What is consanguinous marriage ?

(xii) What is trophic levels ?

2. Explain the following : 12

(a) Complementary factor

(b) Law of Segregation

(c) Lethal factors.

OR

(d) Monohybrid cross

(e) Inhibitory factors

(f) Law of Independent assortment.

3. Describe the following : 12

(g) Darlington's theory of crossing over

(h) Incomplete linkage

(i) Multiple alleles

OR

(j) Erythroblastosis foetalis

(k) Significance of linkage

(l) Single and double crossing over.

4. Describe the genic balance theory of sex determination. 12

OR

Describe haemophilia and its inheritance.

5. Describe the birth control methods in male and female. 12

OR

Describe the identical and fraternal twins and their significance.

6. Explain the following : 12

(m) Commensalism

(n) Phototropism

(o) Intraspecific associations.

OR

(p) Photokinesis

(q) Poikilotherms

(r) Parasitism.

7. Describe the following : 12

(s) Ecological niche

(t) Pyramid of Biomass

(u) Food chains.

OR

(v) Lotic ecosystem

(w) Stratification of Marine ecosystem

(x) Ecotypes.