

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 :

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(i) In supplementary factor the Mendelian ratio is modified to _____.

(ii) _____ syndrome results due to trisomy of chromosome 18.

(iii) _____ is a surgical procedure that cuts or blocks the vas deferens.

(iv) _____ is universal solvent.

(b) Choose correct alternative for the following :

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(v) Recessive gene can be expressed in _____ condition.

(A) Heterozygous

(B) Homozygous

(C) None of these

(D) Both the above

(vi) People suffering from Turner's syndrome do not show _____.

(A) Autosomes

(B) Barr body

(C) Nucleolus

(D) None of these

(vii) CVS is usually performed between _____ weeks.

(A) Ten to Twelve

(B) Twelve to Fourteen

(C) Thirteen to fifteen

(D) Eleven to Thirteen

(viii) Animals which tolerate wide range of salinity are called as _____ animals.

(A) Euryhaline

(B) Stenohaline

(C) Eurythermal

(D) Stenothermal

- (c) Answer in one sentence : 4
- (ix) Define alleles.
 - (x) What is linkage ?
 - (xi) What are twins ?
 - (xii) What is ecosystem ?
2. Explain the following : 12
- (a) Monohybrid cross
 - (b) Lethal factor
 - (c) Law of segregation.
- OR**
- (d) Dihybrid cross
 - (e) Inhibitory factor
 - (f) Law of dominance.
3. What is linkage ? Describe complete and incomplete linkage with suitable examples. 12
- OR**
- What is crossing over ? Describe the factors influencing crossing over and give its significance.
4. Describe the following : 12
- (g) Genic balance theory of sex determination in *Drosophilla*
 - (h) Haemophilia
 - (i) Cystic fibrosis.
- OR**
- (j) XX-XY type sex determination
 - (k) Turner's syndrome
 - (l) Colourblindness.
5. Describe recessive genes and consanguineous marriages. 12
- OR**
- Describe different kinds of twins and their significance.

6. Attempt the following : 12
- (m) Homeotherms
 - (n) Dormancy
 - (o) Effect of light on reproduction.

OR

- (p) Poikilotherms
 - (q) Aestivation
 - (r) Effect of light on migration of animals.
7. Describe the following : 12
- (s) Energy flow in ecosystem
 - (t) Pyramid of biomass
 - (u) Types of eustuaries.

OR

- (v) Food web
- (w) Ecological niche
- (x) Adaptation in Eusturine ecosystem.

