

**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) Q. 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 :

(i) The Mendelian ratio modified to 9 : 7 in \_\_\_\_\_ factor.

(ii) The disease \_\_\_\_\_ is characterised by involuntary jerking of body.

(iii) The type of animal association in which both the associates are benefited is called \_\_\_\_\_.

(iv) With reference to regulation of body temperature, mammals and birds are \_\_\_\_\_.

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(B) Choose correct alternative from the following :

(v) Crossing over is useful because it brings about \_\_\_\_\_.

(a) Variation

(b) Linkage

(c) Homozygosity

(d) Stability

(vi) Lack of melanin causes \_\_\_\_\_.

(a) Phenylketonuria

(b) Sickle-cell anaemia

(c) Alkaptonuria

(d) Albinism

(vii) IUD stands for \_\_\_\_\_.

- (a) Inuterine Dose
- (b) Intra Uterine Device
- (c) Interuterine
- (d) Internal Device

(viii) Light has direct effect on :

- (a) Vision
- (b) Metabolism
- (c) Osmoregulation
- (d) Mutation

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(C) Answer is one sentence :

- (ix) What is heredity ?
- (x) What is gene ?
- (xi) What is VNTRs ?
- (xii) What is dormancy ?

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2. State and explain law of segregation (purity of gametes) with suitable example.

**OR**

Explain the lethal factor and its types.

12

3. Describe the following :

- (a) Significance of linkage
- (b) Characteristics of crossing over
- (c) Erythroblastosis foctails.

**OR**

- (d) Types of linkage
- (e) Important characters of multiple allele
- (f) Mechanism of crossing over.

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4. Attempt the following :

- (g) Hormonal control of sex determination
- (h) Gynandromorphs
- (i) Down's syndrome.

**OR**

- (j) Environmental control of sex determination
- (k) Klinefelter's syndrome
- (l) Genic balance theory.

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5. Describe the following :

- (m) Aminocentesis
- (n) Inheritance of eye colour in human
- (o) Siamese twins

**OR**

- (p) Genetic counselling
- (q) Chorionic Villus Sampling (CVS)
- (r) Significance of twin study.

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6. Describe the properties of water and water problems in terrestrial habitat.

**OR**

Discuss the intraspecific and interspecific competition among the living organisms.

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7. Attempt the following :

- (s) Food chains
- (t) Pyramid of energy
- (u) Characteristics of marine ecosystem

**OR**

- (v) Autotrophs and heterotrophs
- (w) Ecotypes
- (x) Lotic ecosystem.

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