

B.Sc. Part-II Semester-IV Examination
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 all remaining questions carry 12 marks each.

(3) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :

- (i) The gene which is able to express itself in F_1 generation is called _____.
- (ii) In *Drosophila* fertility of male is dependent on the presence of _____ chromosome.
- (iii) _____ is usually performed in the second trimester between 15 and 18 weeks of pregnancy.
- (iv) An _____ is a collection of communities of both living and non-living things that are interrelated. 2

(B) Choose correct alternative :

(v) Blood group _____ belongs to category of universal donor.

- (a) A (b) O
- (c) AB (d) B

(vi) In Turner's syndrome the people do not show _____.

- (a) Barr bodies (b) Nucleus
- (c) Haemin crystal (d) Nucleolus

(vii) _____ is a multiple gene trait.

- (a) Colour blindness (b) Amniocentosis
- (c) Skin colour (d) PKU

(viii) Crossing over is advantageous because it brings about _____.

- (a) Linkage (b) Variation
 - (c) Inbreeding (d) Stability
- 2

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

- (ix) What causes Down's syndrome ?
- (x) What is estuarine ecosystem ?
- (xi) What is Gynandromorphs ?
- (xii) What is holandric inheritance ? 4

2. Explain law of segregation with example.

OR

Describe Supplementary and Duplicate factors. 12

3. Describe the following :
- (a) Types of Linkage.
 - (b) Erythroblastosis foetalis.
 - (c) Theories of crossing over.
- OR**
- (d) Blood groups in man.
 - (e) Mitotic crossing over.
 - (f) Linkage groups. 12
4. Explain the following :
- (g) Heterogametic males.
 - (h) Gynandromorphs.
 - (i) Sickle-cell anemia.
- OR**
- (j) Huntington's Chorea.
 - (k) Klinefilter's Syndrome.
 - (l) Phenylketonuria. 12
5. Describe the following :
- (m) Types of DNA analysis.
 - (n) Hormonal method of contraception.
 - (o) Gene probes and their uses.
- OR**
- (p) Amnicentosis.
 - (q) Fraternal twins.
 - (r) Barrier method of contraception. 12
6. Explain biological effects of light on animals.
- OR**
- Give an account of properties of water and explain water problems in terrestrial habitat. 12
7. Attempt the following :
- (s) Ecological Niche.
 - (t) Estuarine ecosystem.
 - (u) Trophic level.
- OR**
- (v) Autotrophs and Heterotrophs.
 - (w) Food web.
 - (x) Ecotypes. 12