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**GS-350**

VI Semester B.Sc. Examination, May/June 2019

**ZOOLOGY-VII  
GENETICS AND BIO-TECHNOLOGY**

(CBCS) (F+R) (2016-17 & Onwards)

Time : 3 Hours

Max. Marks : 70

- Instructions :** (i) Draw labelled diagrams wherever necessary.  
(ii) Answers should be completely either in Kannada or in English.

**PART - A**

5x3=15

I. Answer **any five** of the following :

1. Write a note on phenocopy.
2. Mention the Mendel's monohybrid.
  - (a) Phenotypic ratio.
  - (b) Genotypic ratio.
  - (c) Test cross ratio.
3. What are gynandromorphs ? Mention the types.
4. Differentiate between spontaneous and induced mutations.
5. Give the significance of transgenesis.
6. Define hybridoma technology. Who proposed it ?
7. List any three applications of DNA fingerprinting.

**PART - B**

5x5=25

II. Answer **any five** of the following :

1. With reference to the inheritance of comb shape in fowls, a rose comb crossed with walnut comb produces offsprings of which  $\frac{3}{8}$  are rose comb,  $\frac{3}{8}$  walnut comb,  $\frac{1}{8}$  pea comb and  $\frac{1}{8}$  single comb. Determine the genotype of parents.

**P.T.O.**



2. Explain multiple factor inheritance with reference to the inheritance of skin colour in man.
3. Write notes on :
  - (a) Erythroblastosis foetalis
  - (b) Free martins
4. Lac Operon is called inducible operon. Substantiate.
5. Explain the cytoplasmic inheritance of kappa particles in paramoecium.
6. List out the differences between surgical and non-surgical embryo transfer.
7. Write notes on :
  - (a) Microinjection.
  - (b) Electroporation.

### PART - C

III. Answer **any three** of the following :

**3x10=30**

1. What is sex-linked inheritance ? Explain it with reference to eye colour in *Drosophila*.
2. Write notes on :
  - (a) Down's syndrome
  - (b) Phenylketonuria
3. Give an account of physical and chemical mutagens.
4. Explain the positive and negative aspects of eugenics.
5. Explain :
  - (a) Artificial insemination
  - (b) In-vivo gene therapy
6. What are stem cells ? Explain the types, sources and their applications.