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No. of Printed Pages : 2

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

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

5x3=15

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

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

5x5=25

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.

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

ZOOLOGY-VIII

Animal Physiology and Techniques in Biology

CBCS (F+R) 2016-17 & Onwards

Time : 3 Hours

Max. Marks : 70

Instructions to Candidates :

- (1) Draw labelled diagrams wherever necessary.
- (2) Answer should be completely either in Kannada or English.

PART - A

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

5x3=15

1. Mention the metallic ion present in the following pigments :
 - (a) Haemoglobin
 - (b) Haemocyanin
 - (c) Chlorocruorin
2. Briefly explain Bohr's effect.
3. What are uricotelic animals ? Give an example.
4. Write a note on acromegaly.
5. Enumerate any three symptoms of hypertension.
6. Give the principle of centrifugation.
7. List any three applications of fractionation.

PART - B

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

5x5=25

1. Discuss symbiotic digestion in ruminants.
2. Explain ornithine cycle.

P.T.O.



3. With respect to parathyroid secretion explain the negative feedback mechanism.
4. Explain osmoregulation in Salmon.
5. Give an account of jaundice.
6. Give the principle and applications of light microscopy.
7. Write notes on :
 - (a) Uses of alcohol in micro-technique
 - (b) Differential staining

PART - C

III. Answer **any three** of the following : **3x10=30**

1. Explain the physico-chemical aspects of muscle contraction.
2. Give an account of :
 - (a) CO₂ transport
 - (b) Hormonal control of metamorphosis in amphibia
3. List the hormones of adrenal gland with one function each.
4. With reference to thermoregulation, explain the role of hypothalamus.
5. Explain the physiology of hearing.
6. Give an account of :
 - (a) Neurotransmitters
 - (b) Endoscopy