



SE – 185

VI Semester B.Sc. Degree Examination, September 2020
(CBCS) (F + R) (2016-17 and Onwards)
ZOOLOGY (Paper – VII)
Genetics and Biotechnology

Time : 3 Hours

Max. Marks : 70

Instructions : 1) Draw diagrams *wherever* necessary.

2) Answers should be **completely** either in **English** or **Kannada**.

PART – A

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

(5×3=15)

- 1) Write a note on norm of reaction.
- 2) What is test crossing ? Give an example.
- 3) List any three applications of blood grouping test.
- 4) Define phenocopy. Give an example.
- 5) Write the function of the following molecular tools of genetic engineering :
 - a) Restriction endonucleases
 - b) Alkaline phosphatase
 - c) DNA Ligase.
- 6) Differentiate between In-vivo and Ex-vivo gene therapy.
- 7) Mention any three applications of Monoclonal antibodies.

PART – B

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

(5×5=25)

- 1) Explain the law of segregation with an example.
- 2) What is erythroblastosis foetalis ? Explain.
- 3) Explain the following :
 - a) Gynandromorphs
 - b) Free martins.

P.T.O.



- 4) What is sex linkage ? Explain with reference to haemophilia in man.
- 5) Explain CLB method of detection of mutation.
- 6) Define superovulation. Explain the steps involved in it.
- 7) What is transgenesis ? Explain knock-out technology in mice.

PART – C

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

(3×10=30)

- 1) Write a detailed account on genic balance theory of bridges.
- 2) Define sex-determination. Explain the different kinds of sex-determination mechanisms with example.
- 3) With reference to chromosomal aberration explain Turner's syndrome and Klinefelter's syndrome.
- 4) Give a detailed account on positive and negative aspects of Eugenics.
- 5) Explain micro injection and electroporation with reference to gene transfer in animals.
- 6) What is DNA fingerprinting ? Explain the steps involved in it. Add a note on its applications.



SE – 186

VI Semester B.Sc. Examination, September 2020
(CBCS) (F + R) (2016 - 17 and Onwards)

ZOOLOGY – VIII

Animal Physiology and Techniques in Biology

Time : 3 Hours

Max. Marks : 70

- Instructions :** 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. (5×3=15)
- 1) What is symbiotic digestion ? Give an example.
 - 2) Explain Root effect.
 - 3) Define ureotelism. Give two examples.
 - 4) What is negative feedback mechanism ? Give an example.
 - 5) Mention the hormones involved in insect metamorphosis. Add a note on their functions.
 - 6) Define fixation. Give any two examples.
 - 7) What is autoradiography ? Mention its application.

PART – B

- II. Answer **any five** of the following. (5×5=25)
- 1) Explain the hormonal control of digestive glandular secretions.
 - 2) Explain oxygen transport in blood.
 - 3) Schematically represent the ornithine cycle.
 - 4) Describe the visual cycle.
 - 5) Explain positive feedback mechanism with a suitable example.
 - 6) Elucidate the methods of heat gain in homeotherms.
 - 7) Highlight the principle and application of endoscopy.

P.T.O.



PART – C

III. Answer **any three** of the following.**(3×10=30)**

- 1) Explain transport of carbon dioxide in the body.
- 2) Give a detailed account of axonal transmission of a nerve impulse.
- 3) Describe the physico-chemical changes that occur during muscle contraction.
- 4) Give an account of the hormones of the anterior pituitary gland and mention their functions.
- 5) Write short notes on Jaundice and hyper acidity.
- 6) Comment on :
 - a) Osmoregulation in fresh-water fishes.
 - b) Fluorescent microscopy.