

VI Semester B.Sc. Examination, May 2017  
(Fresh) (CBCS) (2016 – 17 and Onwards)  
ZOOLOGY – VII  
Genetics and Biotechnology

Time : 3 Hours

Max. Marks : 70

**Instructions :** 1) Draw diagrams *wherever necessary*.  
2) Answer should be either in **Kannada** or **English**.

## PART – A

(5×3=15)

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

1) Define :

- Norm of reaction
- Euphenics
- Phenocopy.

2) List any three characters chosen by Mendel for his experiments.

3) Write note on free martins.

4) Define Rh factor. Mention the theories of inheritance of Rh factor.

5) Write a short note on hypertrichosis.

6) What is transgenesis ? Mention its significance.

7) Write any three applications of monoclonal antibodies.

## PART – B

(5×5=25)

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

1) State Mendel's second law and explain with suitable example.

2) Explain the role of polygenes in the inheritance of skin colour in man.

3) What is sex linkage ? Describe the mechanism of inheritance of haemophilia in man.

4) Write notes on mechanism of sex determination of :

- XX-XY type
- ZO-ZZ type.

P.T.O.



- 5) Define mutation. Explain any two types of spontaneous mutation.
- 6) Explain the fine structure of gene.
- 7) Write notes on :
  - a) Micro injection
  - b) Electroporation.

PART – C

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

(3×10=30)

- 1) Give an account of inheritance of ABO blood groups.
- 2) Write notes on :
  - a) Edward's syndrome
  - b) Down's syndrome.
- 3) Explain :
  - a) Effect of non-ionizing radiations
  - b) Effect of base analog.
- 4) Write explanatory notes on :
  - a) Phenyl ketonuria
  - b) Sickle cell anaemia.
- 5) What are vectors ? Explain any four types with an example each.
- 6) Define DNA profiling. Give an account of steps involved and applications.