US – 378

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

I. Answer **any five** of the following. **(5×3=15)**

1) Define :
   a) Norm of reaction
   b) Euphenics
   c) Phenocopy.
2) List any three characters choosen 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

II. Answer **any five** of the following. **(5×5=25)**

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 :
   a) XX-XY type
   b) 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.

US – 379

VI Semester B.Sc. Examination, May 2017
(CBCS) (Freshers) (2016-17 and Onwards)
ZOOLOGY (Paper – VIII)
Animal Physiology and Techniques in Biology

Time : 3 Hours Max. Marks : 70

Instructions : *1) Draw 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) State the function of :
   a) Gastrin
   b) Cholecystokinin
   c) Secretin.
2) Write a note on Acromegaly.
3) What is Root effect ? Write its significance.
4) List the hormones of Islet of Langerhans with one function each.
5) Mention the main excretory product of :
   a) Amphibian tadpoles
   b) Reptiles
   c) Mammals.
6) List any three applications of chromatography.
7) Comment on the use of alcohol in microtechnique.

PART – B

II. Answer **any five** of the following : **(5×5=25)**

1) Schematically represent ornithine cycle and explain.
2) Explain transport of oxygen.
3) Define synapse. Explain the chemical synaptic transmission.

P.T.O.

4) What are homeotherms ? Explain the methods of heat gain in homeotherms.
5) Write notes on :
   a) Jaundice
   b) Hyperacidity.
6) Explain osmoregulation in catadromous fishes.
7) Give the principles of :
   a) Electrophoresis
   b) Phase contrast microscope.

PART – C

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

1) With reference to physiology of vision, explain :
   a) Accommodation
   b) Visual cycle.
2) Describe the ultrastructure of skeletal muscle with supporting diagrams.
3) Discuss the functions of thyroid gland. Add a note on its hyper secretion.
4) Discuss the feedback mechanism with reference to adrenal secretion.
5) What is oxygen dissociation curve ? Explain the influence of the following on it :
   a) Carbon dioxide
   b) Organic phosphate compounds
   c) Temperature
   d) Body size.
6) What are respiratory pigments ? Give an account of the major types.
