SM – 395

VI Semester B.Sc. Examination, May/June 2018
(CBCS) (F+R) (2016-17 and Onwards)
ZOOLOGY – VII
Genetics and Biotechnology

Time : 3 Hours Max. Marks : 70

Instructions *: 1)* ***Draw*** *labelled diagrams* ***wherever*** *necessary.*
2) Answers should be ***completely*** *in* ***Kannada*** *or* ***English****.*

PART – A

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

1) Write a note on norm of reaction.
2) Define :
   a) Rh factor
   b) Gene interaction
   c) Polygenes.
3) List any three applications of blood groups.
4) Write a note on biological mutagens.
5) Mention the names of components of rDNA technology regarded as
   a) Molecular scissors
   b) Molecular glue
   c) Molecular vector.
6) Give an account of bioreactors.
7) List the applications of stem cells.

PART – B

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

1) State the law of segregation. Explain it with a suitable example.
2) Write notes on :
   a) Y-linked inheritance
   b) Criss-cross inheritance.

P.T.O.

3) Describe cytoplasmic inheritance of coiling of shells in snail.

4) Explain CIB method of detection of mutations.

5) Define eugenics. Explain any two aspects of negative eugenics.

6) Mention the benefits and limitations of embryo transfer.

7) What is gene therapy ? Explain any two approaches of gene therapy.

PART – C

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

1) With reference to the inheritance of comb shape in fowls, work out the following :

   A) Homozygous rose comb is crossed with single comb.

   B) Homozygous pea comb is crossed with single comb.

   C) Conduct a cross between F_1 of A and B, find the offsprings.

2) What is aneuploidy ? Give an account of one autosomal and one allosomal aneuploidy.

3) Explain inducible operon concept with a suitable example.

4) Write notes on :

   a) Genic balance theory

   b) Sickle cell anaemia.

5) Define transgenesis. Explain knock-out and knock-in transgenesis technology in mice.

6) Write notes on :

   a) Hybridoma technology

   b) DNA fingerprinting.

SM – 396

VI Semester B.Sc. Examination, May/June 2018
(CBCS) (Fresh+Repeaters) (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) Write a note on Haldane effect.
2) Define ureotelism with an example.
3) Write a short note on electrical synapse.
4) List any three functions of thyroxine.
5) Briefly explain the causes of obesity.
6) Mention the significance of fixative in microtechnique.
7) Give any three applications of electrophoresis.

PART – B

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

1) Explain the hormonal control of digestive glandular secretions.
2) Define oxygen dissociation curve and discuss the effect of carbon dioxide on the same.
3) Explain physiology of vision.
4) Briefly explain the hormonal control of metamorphosis in insects.
5) Explain the mechanism of osmoregulation in anadromous fish.
6) Give an account of electron microscopy.
7) Write notes on principle and applications of auto radiography.

P.T.O.

PART – C

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

1) Explain carbon dioxide transport.
2) Describe the sliding filament theory of muscle contraction.
3) Write notes on :
   a) Neurotransmitters
   b) Methods of heat loss in homeotherms.
4) With reference to homeostasis explain positive feed back mechanism.
5) List any five hormones of adenohypophysis with one functions each.
6) Write explanatory notes on :
   a) Diabetes mellitus
   b) Immunoassay.
