MS – 336

VI Semester B.Sc. Examination, May 2016
(New Scheme) (Freshers + Repeaters)
ZOOLOGY – VII
Genetics and Biotechnology
70 Marks – 13-14 and Onwards
60 Marks – Prior to 13-14

Time : 3 Hours

Max. Marks :70/60

Instructions : 1) Draw diagrams **wherever** necessary.
2) Answer should be completely either in **Kannada** or **English**.
3) NS – **70** marks : **2013-14** onwards.
4) NS – **60** marks : **2012-13** only.

PART – A

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

1) Define :
   a) Genotype
   b) Norm of reaction
   c) Phenocopy

2) Write the genotype of A, B, AB and O blood groups.

3) Work out the genotype and phenotype of the future offspring if a woman with normal vision whose father was colour blind marries a man with normal vision.

4) Distinguish spontaneous and induced mutations.

5) Give the utility of Plasmid in rDNA technology.

6) What are transgenic animals ? Give any two significances.

7) Mention any three important features of stem cells.

PART – B

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

1) State the Mendel's Law of segregation. Explain it with a suitable example.

2) What are Kappa particles ? Explain their inheritance in *Paramecium*.

P.T.O.

MS – 336

3) Explain C I B method for detection of mutations.

4) Write notes on :
   a) Gynandromorphs
   b) Free Martins

5) What are Bio-reactors ? Explain the steps involved in the operation of a Bioreactor.

6) Briefly explain SOET.

7) Explain in-vivo and ex-vivo methods of gene therapy.

PART – C

III. Answer any two of the following : (10×2=20)

1) With reference to inheritance of comb shape in fowl work out the following crosses :
   a) Rose comb (RRpp) × Single comb (rrpp)
   b) Pea comb (rrPP) × Single comb (rrpp)
   c) Rose comb (RRpp) × Pea comb (rrPP) – Work out both F1 and F2.
   Comment on the results.

2) Give an account on the Chromosomal aberrations based on structure.

3) Write explanatory notes on :
   a) Negative eugenics
   b) Cystic fibrosis.

4) What are Monoclonal antibodies ? Explain the steps involved in their production. Add a note on applications.

PART – D

(Compulsory for students of 2013-2014 and onwards)

IV. Answer any one of the following : (10×1=10)

1) Explain Lac Operon concept in E. coli with illustrations.

2) Write notes on :
   a) Molecular Scissors.
   b) DNA finger printing.