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.

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.

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