SN – 412

V Semester B.Sc. Examination, November/December 2017
(Semester Scheme) (CBCS/NS) (F+R)
GENETICS – V
Recombinant DNA Technology

Time : 3 Hours Max. Marks : 70

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

PART – A

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

1) Write a short note on DNA ligases.
2) Explain the role of terminal nucleotidyl transferase.
3) What is a genomic library ?
4) Explain the role of Taq polymerase.
5) Write a note on Western blots,
6) Briefly comment on immunochemical detection of recombinants.
7) List any three value added attributes of transgenic cow.

PART – B

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

1) Describe $P^{BR\ 322}$ with a neat labelled diagram.
2) Explain the properties of an ideal vector.
3) Comment on DNA polymerase.
4) Give an account on disease-resistant transgenic plants.
5) What are selectable genes ? Explain with examples.
6) Explain organo-chemical synthesis.
7) Describe the steps involved in Nif gene transfer.

P.T.O.

PART – C

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

1) Give an account on Eukaryotic cloning vectors.

2) Explain in detail
   a) Non integrative DNA transfer
   b) Expression vectors in prokaryotes.

3) Discuss on direct methods of selection and screening of recombinants.

4) Describe the methods involved in the production of knock out mouse. Add a note on its applications.

PART – D

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

1) Describe Southern blotting technique.

2) Explain :
   a) Chemical methods of gene transfer.
   b) Lipofection.