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(20516)

Roll No

B. Sc.(Biotech.)-II Year

**NS-3469**

**B. Sc. (Biotechnology) Examination, May 2016**

**RECOMBINANT DNA TECHNOLOGY**

(B-206)

(New)

*Time : Three Hours*

*[Maximum Marks : 50*

*Note : Attempt any five questions. All questions carry equal marks.*

1. Write short notes on the following :  $5 \times 2 = 10$
- (i) Molecular probes
  - (ii) Expression vectors.
2. What are the characteristic features of an ideal vector ? Describe with reference to one plasmid and one bacteriophage vector. 10

(2)

3. Define gene cloning and list the various direct and indirect methods of gene cloning. 10
4. Briefly describe the procedure for preparing a cDNA library and discuss the problems in such venture and suggest their solutions. 10
5. Discuss about the advantages and limitations of genomic DNA library. 10
6. What are the basic principles and applications of Southern and Northern hybridization? 10
7. Describe the essential steps and their working principles of the polymerase chain reaction. 10
8. Describe in detail the principle and methodology of Sanger's method of DNA sequencing. 10
9. What are the restriction enzymes ? Explain their types and functions. 10
10. What do you understand by site-directed mutagenesis and what are its major applications? 10