

[Time: 3 Hours]

[Marks:80]

N.B:

Please check whether you have got the right question paper.

1. Question No.1 is compulsory.
2. Attempt any three questions from Q. Nos.2 to 6
3. Draw neat labeled diagram wherever necessary.

Extra

1. a) Describe the three activities of DNA polymerase I. What is the klenow fragment and why is it useful. (06)
b) State three reasons why bacteria make good host organisms for production of the desired protein by inserting its gene into it. (04)
c) Write short note on Phage as a vector. (05)
d) Briefly describe alpha complementation. (05)
2. Different between the following -(5 marks each) (20)
a) Transformation and Transfection
b) Sanger's sequencing method and Automated Sequencing
c) Gene gun and Microinjection techniques
d) Adaptors and linkers in cloning
3. a) What is RNA interference Technology? Explain its applications? (10)
b) Describe the method of isolation and purification of plasmid DNA? (10)
4. a) Describe the technique of Southern blotting and its applications? (10)
b) Briefly explain what RFLP analysis is? What is the different between performing an RFLP analysis for forensic reasons as compared to performing an RFLP analysis for clinical diagnosis? (10)
5. a) Write a note on production of blood clotting factor VIII by genetic Engineering. (10)
b) What is genomic library? Explain the technique for genomic library screening? (10)
6. a) Give salient features of pUC and Ti plasmids (10)
b) Discuss in detail, any two enzymes used in recombinant DNA technology. (10)