

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2024
(Fourth Semester)

Branch - BIOTECHNOLOGY

RECOMBINANT DNA TECHNOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- Which polymerase is used in PCR based mutagenesis?
a) Deep vent R polymerase b) pfu polymerase
c) Taq polymerase d) DNA polymerase
- Which is an example of a simplest vector (in terms of size)?
a) 2 micron circle b) Bacteriophage
c) Plasmid d) YAC
- What is the approximate size of the SV40 vector?
a) 1 kb b) 2 kb
c) 3.2 kb d) 5.2 kb
- Polymerase chain reaction (PCR) was invented by _____
a) Kary Mullis b) James Watson
c) John Hopkins d) Hargobind Khorana
- When was the first method of site-directed mutagenesis developed?
a) 1940 b) 1970
c) 1980 d) 1950

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- a Explain about Nucleases.
OR
b Explain Cloning Strategies.
- a Explain YAC.
OR
b Explain λ phage vector.
- a Give detailed account on SV40 vector.
OR
b Elucidate Blue-White Colony Selection Method.
- a Explain RACE.
OR
b Discuss the Multiplex PCR .

Cont...

10 a Discuss the polymerase chain reactions based site-directed mutagenesis.

OR

b How does Genome Editing work?

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11 a Give detail notes on Restriction Enzymes.

OR

b Explain DNA Methylation and its importance.

12 a With labelled diagram enlist the structure of PBR322.

OR

b Explain pUC18 and its function.

13 a Describe Construction of a genomic library.

OR

b Give detail account on Principle and procedure of Southern Blot.

14 a Discuss in brief about real time PCR with suitable diagram.

OR

b Explain maxam Gilbert method of DNA Sequencing.

15 a Explain about Gene targeting methods.

OR

b Describe Insulin produced by recombinant DNA technology.

Z-Z-Z

END