

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2022
(Third Semester)

Branch – BIOCHEMISTRY

MOLECULAR BIOTECHNOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions
ALL questions carry EQUAL marks (5 x 1 = 5)

1. Restriction enzymes are isolated from
 - (i) Virus
 - (ii) Fungi
 - (iii) Protozoa
 - (iv) Bacteria
2. Genomic library construction is concerned with _____
 - (i) Gene isolation
 - (ii) Protein production
 - (iii) Antibiotics
 - (iv) Regeneration
3. The process of introduction of foreign DNA into an animal cell is called _____
 - (i) Transversion
 - (ii) Conversion
 - (iii) Inversion
 - (iv) Transfection
4. First genetically modified plant produced in 1982 was
 - (i) Transgenic tobacco
 - (ii) Transgenic maize
 - (iii) Transgenic tomato
 - (iv) Transgenic cotton
5. In 1990, the first gene therapy was given to treat which disease?
 - (i) Smallpox
 - (ii) AIDS
 - (iii) Cancer
 - (iv) SCID

SECTION - B (15 Marks)

Answer ALL Questions
ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a State the main function of restriction enzymes.
OR
b Organize the properties of vector.
- 7 a What is cDNA library? How are they made?
OR
b Explain the colony hybridization.
- 8 a Illustrate the electroporation and its uses.
OR
b Analyze the gene knockout process.
- 9 a Determine the gene transformation techniques.
OR
b Sketch the applications of transgenic plants.
- 10 a Illustrate Somatic cell therapy
OR
b Evaluate the benefits of stem cells.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11 a Define restriction enzymes and categorize their types.

OR

b Evaluate the cloning vectors.

12 a Illustrate the construction of cDNA library.

OR

b Determine the in vitro mutagenesis.

13 a Recommend the methods of introduction of foreign DNA into the animal cells.

OR

b Explain the methods used for production of transgenic mice.

14 a Interpret the gene transfer techniques in plants by using agrobacterium tumefaciens.

OR

b Elaborate the transgenic plants and its applications.

15 a Evaluate the somatic cell gene therapy.

OR

b Analyze the advantages and disadvantages of stem cells.

Z-Z-Z

END