

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2022
(Second Semester)

Branch – BIOTECHNOLOGY

GENOMICS AND PROTEOMICS

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

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

1. The region of repetitive nucleotide sequences at each end of chromatid is
 - a) Centromere
 - b) Telomere
 - c) Monomer
 - d) Isomers
2. Shotgun approach is an example of
 - a) Genome sequencing
 - b) Amino acid sequencing
 - c) m – RNA sequencing
 - d) Protein sequencing
3. Proteomics refers to the study of _____
 - a) Set of proteins in a specific region of the cell
 - b) Biomolecules
 - c) Set of proteins
 - d) The entire set of expressed proteins in the cell
4. Find the technique used to determine the three-dimensional structure of proteins
 - a) Mass spectroscopy
 - b) X- ray crystallography
 - b) NMR spectroscopy
 - d) LCMS
5. Protein microarrays are used to
 - a) determine the function of proteins
 - b) monitor their interactions
 - c) Both a and b
 - d) None of the above

SECTION - B (15 Marks)

Answer ALL Questions

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

- 6 a Organize the structure of human Y chromosome.
OR
b Compare and contrast RFLP and RAPD.
- 7 a Explain in detail about comparative genomics.
OR
b State the potential applications of RNA interference.
- 8 a Discuss about 2D electrophoresis in detail.
OR
b State the applications of CHIP in proteomics.
- 9 a Illustrate the importance of X ray crystallography.
OR
b Discuss briefly about the protein- protein interactions.
- 10 a Sketch the significance of protein truncation test.
OR
b Protein micro arrays as tools for functional proteomics – justify.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11 a Elucidate the structure of eukaryotic genome.

OR

b Explain in detail about SNP.

12 a Elucidate the principle and applications of DNA micro array.

OR

b How can you test the bone marrow engraftment?

13 a Categorize the types and applications of Mass spectrometry.

OR

b Assess about the multidimensional liquid chromatography.

14 a Interpret the concept and applications of Y2H.

OR

b Describe in detail about NMR spectroscopy.

15 a How can you detect auto-antibodies in breast cancer? Interpret the technology.

OR

b Elaborate the electrophoretic mobility shift assay (EMSA).

Z-Z-Z

END