

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

MSc DEGREE EXAMINATION MAY 2019
(Second Semester)

Branch - BIOTECHNOLOGY

GENOMICS AND PROTEOMICS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(1 0 x 1 = 10)

- 1 The study of full complement of proteins expressed by a genome is called**
(i) Proteome (ii) Proteomics
(iii) Genomics (iv) Protein formation
- 2 What is the maximum number of alleles a SNP can have?**
(i) 20 (ii) 4
(iii) 12 (iv) 2
- 3 Sequencing of genomic DNA is included in**
(i) Phenotypic function (ii) Cellular function
(iii) Molecular function (iv) Structuralgenomics
- 4 The shotgun approach_____ sequences clones from_____ of cloned DNA.**
(i) randomly, one end (ii) randomly, both ends
(iii) specifically, both ends (iv) specifically, one end
- 5 At certain pH environments isoelectric point affects the**
(i) Solubility of Molecule (ii) Solubility of Solvent
(iii) Temperature (iv) Density of Molecule
- 6 The Collection of proteins that can be produced by a given species is:**
(i) Considered that species' genetic complement
(ii) Correlated with the size of the organism
(iii) Called the proteome (iv) All of these
- 7 Who invented mass spectrometers?**
(i) J.J. Thompson (ii) Goldstein
(iii) Nikola Tesla (iv) Aston
- 8 X-rays have larger wavelengths than which of the following?**
(i) Gamma rays (ii) Beta rays
(iii) Microwave (iv) Visible light
- 9 The technique which is used to diagnosed Klinefelter's syndrome(XXY) is**
(i) Karyotyping (ii) Somatic cell genetics
(iii) Pedigree analysis (iv) None
- 10 Oncogenes do not encode for**
(i) Trans-membrane protein receptors (ii) Growth factors
(iii) DNA-dependent RNA polymerase
(iv) Cytoplasmic G-proteins and protein kinase

Cont...

SECTION - B (25 Marks!)**Answer ALL questions****ALL questions carry EQUAL Marks****(5x5 = 25)****11 a Write a note on tandem repeats and dispersed repeats.****OR****b Give account on Gene Fusion.****12 a Discuss shotgun sequencing in brief.****OR****b Explain RNA interference in short.****13 a Write notes on TOF.****OR****b Explain antigen arrays.****14 a Write a note on random library methods.****OR****b Write note on yeast 2 hybrid system.****15 a State the applications of protein micro arrays.****OR****b Write note on EMSA.****SECTION -C (40 Marks)****Answer ALL questions****ALL questions carry EQUAL Marks (5x8 = 40)****16 a Illustrate in detail on RFLP.****OR****b Write a note on a) B AC map b) Happy mapping****17 a Elucidate comparative genomics of bacteria and eukaryotes.****OR****b Give a detailed account on HLA based polymorphism.****18 a Enumerate 2D electrophoresis.****OR****b Describe protein micro array in detail.****19 a Justify in detail about protein interaction based on comparative genomics.****OR****b Write an essay NMR spectroscopy.****20 a Assess Electrophoresis shift assay in detail .****OR****b Criticize high density protein micro array to detect auto antibodies in breast cancer.**