

PARUL UNIVERSITY
PARUL INSTITUTE OF APPLIED SCIENCES
MID SEMESTER INTERNAL EXAMINATION, SEPTEMBER 2018
B. Sc. Semester V

Subject: Microbiology/Biotechnology/Biochemistry

Paper Code: 11102305

Title of the paper: Omics Technologies

Date: 10/09/2018

Time: 11.30AM to 01:00PM

Maximum Marks: 40

Instructions:

1. All questions are compulsory and options are given in first and second question only.
 2. Numbers to the right of question indicate the marks of respective question.
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Q. 1 Attempt any one question of the following. (08)

(i) Describe different types of Omics fields and respective technologies used to study them.

(ii) Write an essay on 'Nucleic acid Sequencing' also explaining NGS technology.

Q. 2 Attempt any three questions of the following. (12)

(i) Write a note on Genome reduction.

(ii) Describe '1000 Plant Genome Project'.

(iii) Write a brief note on NCBI.

(iv) Name a few Bioinformatics centers and their significance.

(v) What is Complete Genome Project? Name a few projects.

Q. 3 Do as directed. Attempt all five questions. (05)

(i) Mention the contribution of Allan Coulson in relation to DNA sequencing.

(ii) What is GRC? Explain in one or two lines.

(iii) Explain the purpose of a Database.

(iv) What does NCBI stand for?

(v) Explain the terms Transcriptome and Volatilome.

Q. 4 Write correct option in your answer sheet for following 15 multiple choice questions. (15)

MCQ 1 The comprehensive study of the sugars and carbohydrates is called _____

- (A) Glycomics (B) Glucomics
(C) Glucosics (D) Carbidomics

MCQ 2 Which field is also concerned with the structure, function, comparison, and evolution of genomes? _____

- (A) Genomics (B) Functional genomics
(C) Epigenomics (D) Comparative genomics

MCQ 3 Who published the Amino acid sequence of insulin in 1955? _____

- (A) Frederick Sanger (B) Adam Gilbert
(C) James Watson (D) Frederick Crick

MCQ 4 Who published a sequencing procedure using DNA polymerase with radiolabelled nucleotides that was called the Plus and Minus technique? _____

- (A) Alan Coulson and Fredrick Sanger (B) Frederick Sanger
(C) Alan Coulson (D) Walter Gilbert

- MCQ 5 Complete genome of human published in _____
 (A) 2001 (B) 2009
 (C) 2003 (D) 2007
- MCQ 6 ESS stands for _____
 (A) Epigenomics Simple Sequencing (B) Environmental Shotgun Sequencer
 (C) Environmental Shotgun Sequencing (D) Easy System Sequencing
- MCQ 7 _____ is the study of genetic material recovered directly from environmental samples.
 (A) Metagenomics (B) Ecogenomics
 (C) Environmental genomics (D) None of A,B or C
- MCQ 8 PIR stands for _____
 (A) Protein Information Reserve (B) Proteomics Information Reserve
 (C) Protein Information Resource (D) Proteomics Information Reserve
- MCQ 9 The length of *Homo sapiens* genome is _____
 (A) 12.1×10^2 bp (B) 9.5×10^5 bp
 (C) 2.1×10^{12} bp (D) 3.2×10^9 bp
- MCQ 10 Chemical method of Nucleic acids sequencing was proposed by _____
 (A) Maxam and Gilbert (B) Frederick Sanger
 (C) Allan Coulson (D) Steve Jobs
- MCQ 11 _____ is modifications are reversible modifications on a cell's DNA or histones that affect gene expression without altering the DNA sequence.
 (A) Genetics (B) Epigenetic
 (C) Metagenetics (D) None of A,B or C
- MCQ 12 Human species, whose genome includes _____
 (A) 23 pairs of autosome (B) 22 pairs of autosomes and 2 sex chromosomes
 (C) 48 pairs of chromosome (D) 23 pair of autosome and 2 sex chromosome
- MCQ 13 Example of Secondary database is _____
 (A) NCBI (B) Swissprot
 (C) PIR (D) Genbank
- MCQ 14 The term 'Genomics' was coined by _____
 (A) Hans Winkler (B) Tom Roderick
 (C) Henry Jackson (D) Walter Gilbert
- MCQ 15 The number of Cyanobacteria genus whose complete genome is sequences is _____
 (A) 24 (B) 76
 (C) 28 (D) 82

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