

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc., Winter 2018-19 Examination

Semester: 3
Subject Code: 11202201
Subject Name: Bioinformatics & Biostatistics

Date: 25/10/2018
Time: 10:30am to 1:00pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)

- (a) Answer in brief
1. Basic Operations of a Computer System.
 2. Who and when proposed the concept of Modern Computer? What was its purpose?
- (b) Match correctly Column A with Column B.

Column -A	Column-B
1. First Generation Computing	a) Significance
2. ENIAC	b) Pascal's Calculator
3. ANOVA	C) Trackball
4. Input device	d) Second Generation Computing

Q.1. B) Answer the following questions (Any two)

- (a) Short note/ Brief note (Each of 02 marks) (04)
1. Genomics
 2. Proteomics
- (c) Write a short note on Genome annotation (04)
- (d) Write a Short note on Tests of Significance (04)

Q.2. A) Answer the following questions.

- (a) Describe Molecular Phylogeny and the concept methods for phylogenetic tree construction. (04)
- (b) What are various types of measures of central tendency of dispersion? (04)

Q.2. B) Answer the following questions (Any two)

- (a) Give full forms of following terms: (Each of 01 marks) (03)
1. BLAST
 2. NCBI
 3. SCOP
- (b) Write a short note on Multiple Sequence Alignment. (03)
- (c) Mention the three steps of Genome annotation. (03)

Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)

- (a) What is the scope of Computers in current Biological Research? Describe in detail?
- (b) Write an essay on Biological Databases.

Q.3. B) Answer the following questions (Any two)

- (a) Define following term (04)
1. Architecture of Computer
 2. Binary Number System
- (b) What do you mean by Online and Offline Tools in Bioinformatics? (04)
- (c) Mean, Mode and Median aid in Data distribution analysis– Justify. (04)

Q.4. A) Answer the following questions.

(a) Fill in the blanks. (Each of 02 marks)

(04)

1. ALU stands for _____

2. ANOVA stands for _____

(b) Write a short note on Global Bioinformatics Institutes.

(04)

Q.4. B) Answer the following questions (Any two)

(a) Answer following questions

(03)

1. Give two examples of Biostatistical analysis tests.

2. What is CADD?

3. Differentiate between genomics and proteomics.

(b) Data analysis requires both bioinformatics and biostatistics. State whether the statement is true or false. State two reasons to support your answer.

(03)

(c) Write types of Genome sequencing platforms.

(03)