

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc., Winter 2017-18 Examination

Semester: 3**Subject Code: 11202201****Subject Name: Bioinformatics and Biostatistics****Date: 21-12-2017****Time: 10:30AM to 01:00PM****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) Answer the following (Each of 04 marks) (08)**
- (a) Explain the role of Genome annotation.
 - (b) Explain in detail 'Molecular Phylogeny'.
- Q.1. B) Answer the following questions (Any two) (04)**
- (a) **Answer the following** (Each of 02 marks) (04)
 1. In computer language 'C', what does 'ANSI' stand for?
 2. In the world of internet, what does 'WWW' stands for?
 - (b) What does EMBL stand for? Explain briefly. (04)
 - (c) Describe following Sequence alignment analysis softwares: MACAW, T-COFFEE. (04)
- Q.2. A) Answer the following questions. (04)**
- (a) **Answer the following** (Each of 02 marks) (04)
 1. Define 'Median'.
 2. Define 'Mode'.
 - (d) Write a short note on NCBI. (04)
- Q.2. B) Answer the following questions (Any two) (03)**
- (a) **Answer the following** (Each of 01 marks) (03)
 1. Describe full form of CADD?
 2. What is MPSS? Give full form only.
 3. What is the name of portal that the Swiss Institute of Bioinformatics (SIB) maintains?
 - (b) Describe what is Protein Data Bank. (03)
 - (c) Write a short note on 'Measure of Central Tendency'. (03)
- Q.3. A) Answer the following (Each of 04 marks) (08)**
- (a) Write a brief note on 'Multiple Sequence Alignment'.
 - (b) Describe the concept methods of a Phylogenetic tree construction.
- Q.3. B) Answer the following questions (Any two) (04)**
- (a) **Answer the following** (Each of 02 marks) (04)
 1. Explain the steps of Functional annotation.
 2. Explain the steps of Structural annotation.
 - (b) Write a note on SWISS-PROT. (04)
 - (c) What is a 'Biological database'? Explain briefly. (04)
- Q.4. A) Answer the following questions. (04)**
- (a) **Answer the following** (Each of 02 marks) (04)
 1. Explain the terms 'Range' and 'Variance'.
 2. Explain the terms 'Standard deviation' and 'Dispersion'.
 - (b) Write a note on 'Tests of Significance'. (04)
- Q.4. B) Answer the following questions (Any two) (03)**
- (a) **Answer the following** (Each of 01 marks) (03)
 1. Give the full form of 'ENCODE'
 2. Give the full form of 'Vega'
 3. Give the full form of 'ESS'
 - (b) Briefly explain what is Arithmetic Logic Unit? (03)
 - (c) Describe what is 'Binary Number System'. (03)