PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc./IMSC, Winter 2019-20 Examination

Semester: 1/7   **Date: 02/12/2019**
Subject Code: 11202105   **Time: 10:30 am to 01:00 pm**
Subject Name: Biostatistics and Computer Applications   **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) Brief note (4x2) (Each of 04 marks)   **(08)**
   (a) Explain discrete and continuous probability models
   (b) Give a brief introduction of one way and two-way analysis of variance.

Q.1. B) Answer the following questions (Any two)
   (a) Short note on Central limit theorem   **(04)**
   (b) Short note on Chi-square test   **(04)**
   (c) Discuss Critical region and error probabilities.   **(04)**

Q.2. A) Answer the following questions.
   (a) Short note on EMBL and DDBJ .   **(04)**
   (b) Short note on PIR and swissprot.   **(04)**

Q.2. B) Answer the following questions (Any two)
   (a) Short note on Elements of programming languages – C.   **(03)**
   (b) Short note on Markov models   **(03)**
   (c) Short note on Pattern recognition methods   **(03)**

Q.3. A) Essay type   **(08)**
What is HMMS? Explain Use of profile HMM for protein family classification.

Q.3. B) Answer the following questions (Any two)
   (a) What are the Goals of a Microarray experiment?   **(04)**
   (b) Short note on PDB   **(04)**
   (c) Short note on NDB.   **(04)**

Q.4. A) Answer the following questions.
   (a) Protein structure prediction   **(04)**
   (b) Short note on Homology modeling   **(04)**

Q.4. B) Answer the following questions (Any two)
   (a) Short note on File formats for storage and dissemination of molecular structure.   **(03)**
   (b) Short note on molecular dynamics simulation   **(03)**
   (c) Short note on Molecular energy minimization.   **(03)**