

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

**Semester: 4**  
**Subject Code: 11202252**  
**Subject Name: Genomics and Proteomics**

**Date: 10/05/2018**  
**Time: 2:00 pm to 4:30pm**  
**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) Write a note on Proteomics.  
 (b) Explain briefly 'Complete Genomes'.
- Q.1. B) Answer the following questions (Any two) (04)**  
 (a) Brief note (Each of 02 marks)  
 1. What are Orthologous and Paralogous sequences?  
 2. Give the purpose of Infinium and Apex-2 assays  
 (b) Explain what is Human evolutionary genetics (04)  
 (c) Name and describe WGS (04)
- Q.2. A) Answer the following questions. (04)**  
 (a) Brief note (Each of 02 marks)  
 1. Compare Syntenic and Colinear sequences  
 2. How are patient genotypes categorized based on predicted phenotypes in Personalized medicine?  
 (b) Compare any two high throughput sequencing methods (04)
- Q.2. B) Answer the following questions (Any two) (03)**  
 (a) Short answer questions (Each of 01 marks)  
 1. Mention the names of any one Nucleic acid database  
 2. Mention the name of any one Gene expression database  
 3. Which field investigates role of genome in drug response?  
 (b) Enlist the three steps of Genetic epidemiological research as outlined by M. Tevfik Dorak. (03)  
 (c) Give three examples of Proteopathy and associated aggregating protein (03)
- Q.3. A) Brief note (4x2) (Each of 04 marks) (08)**  
 (a) What is Protein toxicity? How is it investigated?  
 (b) What is a cancer biomarker? How does it aid in health care?
- Q.3. B) Answer the following questions (Any two) (04)**  
 (a) Brief note (Each of 02 marks)  
 1. Write a note on Genomics  
 2. Explain Polypharmacy  
 (b) Which field related to bioinformatics studies cDNA sequences? (04)  
 (c) Write a note on Unigene. (04)
- Q.4. A) Answer the following questions. (04)**  
 (a) Brief note (Each of 02 marks)  
 1. What is a linkage map?  
 2. Explain Gene mapping in one sentence  
 (b) Describe in detail what is Rational design? (04)
- Q.4. B) Answer the following questions (Any two) (03)**  
 (a) Short answer questions (Each of 01 marks)  
 1. Explain the term 'Syntenic'  
 2. What is the name of parent company that invented Pyrosequencing?  
 3. Give the definition of Polymorphism  
 (b) Name any three Cancer biomarkers (03)  
 (c) What is RFLP? (03)