

B.Sc. Semester-VI (Hons.) Examination,2022
Subject: Biotechnology (Hons.)
Paper: CC-14 (Genomics & proteomics)

Time: 2 Hours

Full Marks: 40

Q1. Answer *any five* from the following

2 x 5=10

- a. Write the full form of 'NCBI' and 'PAGE'?
- b. Name two genome sequence assembly software.
- c. What do you mean by Van der Waal's interaction ?
- d. Write names of any two web based servers for genome sequence analyses.
- e. What is ENSEMBL ? Write the significance of VISTA?.
- f. Write the significance of model organisms' databases.
- g. What is the largest possible size of a protein encoded by a 1.2 kilo base pair DNA fragment?
- h. What is shotgun sequencing method ?

Q2. Answer *any two* from the following:

5x2=10

- a. Discuss the significance of genome sequence analyses.
- b. Write briefly on electrostatic interaction.
- c. Explain the principle of mass spectrometry based method for protein identification.
- d. Write the principle of 2D gel electrophoresis of protein.

Q3. Answer *any two* from the following:

10 x 2=20

- a. With suitable diagram illustrate Sanger's DNA sequencing method.
- b. What are Proteome and proteomics? Explain the principle and application of SDS-PAGE. 2+(5+3)
- c. What is Native PAGE? Briefly describe Edman degradation method . 3+7=10
- d. Explain the pyrosequencing method for DNA sequencing.