



**PAT-16031202020200** Seat No. \_\_\_\_\_

**M. Sc. (Biochemistry) (Sem. II) (CBCS) Examination**

**August - 2020**

**IBC - 2 : Bioinformatics & Biostatistics**

Time : **2:30** Hours]

[Total Marks : **70**

**1** Answer briefly any **seven** of the following questions : **14**

- (a) What is the role of NCBI?
- (b) Name a few literature databases.
- (c) What is the function of PCR primer databases?
- (d) What are non coding RNAs?
- (e) State the importance of disease databases.
- (f) What is polypharmacology?
- (g) Explain null hypothesis and alternative hypothesis.
- (h) What do you understand by confidence limits?
- (i) How protein 3D structure predictions can be made?
- (j) What is Venomics?

**2** Answer any **two** of the following questions : **14**

- (a) Explain about the various branches of Bioinformatics.
- (b) Write a note on use of databases and tools in biological discovery.
- (c) Write a note on Human Genome Project.

**3** (a) Briefly explain carbohydrate structure databases. **7**

(b) Describe microarray databases. **7**

**OR**

**3** (a) Write in brief on generalized nucleotide sequence databases. **7**

(b) Discuss about protein model databases. **7**

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**1**

**[ Contd....**

- 4 Answer the following questions : 14
- (a) Discuss about basic concepts of sequence alignment : pairwise and multiple sequence alignment.
  - (b) Give a note on phylogenetic analysis tools.
- 5 Answer the following questions : (Any Two) 14
- (a) What is chi square test? Explain in detail.
  - (b) Define mean, median and mode with examples.
  - (c) Explain student's t-test in detail.
  - (d) Discuss in detail regression and correlation analysis.
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