

B.Sc. (Part-III)

Fund. of Bioinf. & Nano.

8008-II

B.Sc. (Part-III) Examination, 2021

(Faculty of Science)

(Common to Three and Five Year Integrated Course)

BIOTECHNOLOGY

Paper-BT-802

(Fundamentals of Bioinformation and Nanotechnology)

Time Allowed : 3 Hours

Maximum Marks : 50

Answer of all the questions (short answer as well as descriptive) are to be given in the main answer-book only. Answers of short answer type questions must be given in sequential order. Similarly all the parts of one question of descriptive part should be answered at one place in the answer-book. One complete question should not be answered at different places in the answer-book.

Write your roll number on question paper before start writing answers of questions.

Question No. 1 is compulsory. Answer **five** questions in all, selecting at least **one** question from each Section.

PART-A

1. Write the answer of the following in very short :

- (i) What do you mean by Bioinformatics?
- (ii) What is Secondary database?
- (iii) What is Swiss-Prot?
- (iv) What is FASTA format?
- (v) Define BLASTn.

- (vi) Who known as founder of Nanotechnology?
- (vii) What do you mean by Bucky ball?
- (viii) What do you mean by green synthesis of nanoparticles?
- (ix) Write any two applications of Nanotechnology in medical field.
- (x) How is nanometer related to Angstrom?

10x1=10

PART-B

SECTION-A

2. Write short notes on following :

- (i) NCBI.
- (ii) PDB.
- (iii) Pubmed.
- (iv) Uniprot.

2½x4=10

OR

Write short notes on following :

- (i) History of Bioinformatics.
- (ii) Primary database.

5+5=10

SECTION-B

3. Write differences between these :

- (i) Global v/s local alignment.
- (ii) Pairwise v/s multiple alignment.
- (iii) FASTA v/s BLAST.

3+3+4=10

OR

Give a detailed account of application of Bioinformatics.

10

SECTION-C

4. What is nanotechnology? Discuss concept, history and scope of nanotechnology. 10

OR

Describe the various properties of nano-material. 10

SECTION-D

5. Explain the role of nanotechnology in following fields :

(i) Drug development.

(ii) Energy production.

5+5=10

OR

Write short notes on following :

(i) CNT.

(ii) Nanohorns

(iii) Dendrimers.

4+3+3=10
