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BR—334—2016

FACULTY OF COMPUTER STUDIES

M.Sc. (Second Year) (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2016

(Revised Course)

COMPUTER SCIENCE

Paper CS-403-C

(Introduction to Bioinformatics)

(Tuesday, 22-11-2016)

Time : 2.00 p.m. to 5.00 p.m.

Time—Three Hours

Maximum Marks—100

N.B. :— (i) All questions are compulsory.

(ii) Draw neat and well labelled diagram wherever necessary.

(iii) Assume suitable data wherever necessary.

1. (a) Explain structure of Prokaryotic gene. 10

(b) Describe any *one* tool for web search. 10

Or

(c) Explain overlapping and alternative genes. 10

(d) Explain the inter-relationship between various databases. 10

2. (a) Which types of problems are solved by Bioinformatics ? Explain. 10

(b) Explain any *two* biological alignment problems. 10

Or

(c) Explain the levels of biological activity in a cell. 10

(d) Explain dot matrix method in detail. 10

3. (a) Enlist the recommended steps for a FASTA search. 10

(b) Explain pharmacogenetics and pharmacogenomics applications. 10

Or

(c) Explain significance of the E-value. 10

(d) Explain historical perspective of drug discovery. 10

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4. (a) Explain drug targets by G-protein coupled receptors. 10
- (b) Explain the applications of bioinformatics. 10
- Or*
- (c) Explain Quantum Cache and Docking programs. 10
- (d) Explain cell cycle in drug discovery. 10
5. Write short notes on any *four* : 20
- (a) Implementations of FASTA
- (b) Heuristics Method
- (c) Sequence Assembly Problem
- (d) Primary Databases
- (e) Genomics
- (f) Database Generation.

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