B.E. (Information Technology) Semester Seventh (C.B.S.)

Elective - I : Bio-Informatics

P. Pages : 2 **KNT/KW/16/7503**

Time : Three Hours * 0 8 8 4 * Max. Marks : 80

Notes :
1. Solve Question 1 OR Questions No. 2.
2. Solve Question 3 OR Questions No. 4.
3. Solve Question 5 OR Questions No. 6.
4. Solve Question 7 OR Questions No. 8.
5. Solve Question 9 OR Questions No. 10.
6. Solve Question 11 OR Questions No. 12.
7. Due credit will be given to neatness and adequate dimensions.
8. Assume suitable data wherever necessary.
9. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) What is bio-informatics ? Explain its objectives. **5**

b) Write notes on : **9**

i) Data integration

ii) Data analysis

iii) Bioinformatics tools

OR

2. a) Explain summarized metadata and reference systems. **7**

b) Write notes on finding new type of data online. **7**

3. a) Explain various applications of bioinformatics in detail. **6**

b) Write a note on molecular biology. Also explain system approach in biology. **7**

OR

4. a) Explain central dogma of molecular biology. **7**

b) Explain various problems associated in bioinformatics approach and molecular approach. **6**

5. a) Explain structure of DNA and DNA replication. **6**

b) Explain the procedure for sequencing a DNA. **7**

OR

6. a) Write notes on following terms : **8**

i) Proteins and amino acids ii) Protein structure

iii) Secondary structure iv) Tertiary structure

b) Explain Nucleic acid protein interaction in detail. **5**

7. a) Write a note on Linux Operating system. **6**

b) Give the brief introduction to biostatistics. **7**

OR

8. a) Give the detailed introduction on CORBA. **5**

b) Write notes on : **8**
i) Perl
ii) Java Clients

9. a) Write a note on transcription factor binding sites and single nucleotide polymorphism. **7**

b) Explain flat databases and object oriented databases. **7**

OR

10. Explain following data retrieval techniques. **14**
i) Indices
ii) Boolean search
iii) Fuzzy search and neighbouring
iv) Biological data warehouses

11. a) Explain : **9**
i) Macromolecular structures
ii) Chemical compounds
iii) Generic variability

b) Write a note on connection to clinical data of generic variability. **4**

OR

12. a) Explain following representations of patterns and relationships. **13**
i) alignments
ii) regular expressions
iii) hierarchies and graphical models.

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