r) Sequence Annotation. 4

6. a) What is protein organization? 4

b) Explain Insilico analysis of primary structure of proteins. 4

c) Protein Tertiary Structure. 4

OR

p) Explain PDB files. 4

q) Fold recognition in Homology modeling. 4

r) Explain Ab initio method for Tertiary structure prediction. 4

7. What is HMM? Give its application in sequence alignment and structure prediction. 12

OR

What is BLAST? Explain BLAST for string matching and Homology prediction. 12

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B.Sc. Part - III Semester - V

5 S : Bioinformatics : Methods in Bioinformatics

P. Pages : 4

Time : Three Hours Max. Marks : 80

Notes : 1. All questions are compulsory.
2. Draw well labelled diagrams wherever necessary.

1. a) Fill in the blanks.

i) RNG stands for ..... ½

ii) PDB is the ..... ½

iii) FASTA uses the strategy known as ..... ½

iv) PSI-BLAST means ..... ½

b) Complete the sentences by selecting the correct alternative.

i) ..... is Biological search engine. ½

a) BLAST b) SRS
c) PDB d) DBMS

ii) Gene expression omnibus and Array Express are ..... database. ½

a) Microarray b) Enzyme
c) Biodiversity d) SWISSPROT

iii) ..... tool is used for similarity searches. ½
a) BLAST b) FASTA
c) PSI-BLAST d) PHI-BLAST

iv) Genome and GOLD are ..... database. ½
a) Biodiversity b) Biological database
c) Genomic d) None

c) Answer in one sentence each.

i) What is homology modeling? 1

ii) Define 'EST'. 1

iii) What is Data Abstraction? 1

iv) Define genetic code. 1

2. What is Microarray? Explain any two Microarray Database. **12**

OR

What is RDBMS? Give its importance? **12**

3. a) Define and explain genome organization. **4**

b) What is STS? **4**

c) Write a short note on GenBank. **4**

OR

p) Explain limitation of computation analysis. **4**

q) What is primary structure of nucleic acid. **4**

r) Explain Genomic Databases with application. **4**

4. a) What is Random Number Generators? **4**

b) Explain Hashes data structure. **4**

c) What is FASTA format? **4**

OR

p) Define similarity and Homology with suitable example. **4**

q) PSI-BLAST. **4**

r) FASTA similarity search tool. **4**

5. a) Define and explain restriction maps. **4**

b) GenBank Libraries. **4**

c) PDB. **4**

OR

p) SWISSPROT. **4**

q) SRS. **4**