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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
T1 EXAMINATION- FEB. 2018
B.Tech (BI) VI Semester

COURSE CODE: 10B11BI614 MAX.MARKS: **15**
COURSE NAME: Advanced Algorithms for Bioinformatics MAX. TIME: **1 Hrs**
COURSE CREDITS: 4

Note: All questions are compulsory. Carrying of mobile phone and calculator during examinations will be treated as case of unfair means.

1. Differentiate between Fibonacci and recursive Fibonacci with an example. [2]

2. How many distinct substrings will be available for the string 'ATAGTG'? Write pseudo-code/code for identifying distinct substring. [2]

3. Write pseudo-code for string duplication problem. [1]

4. Differentiate between distance and similarity through their respective mathematical procedures. [2]

5. Solve the exon chaining problem for the following set of weighted intervals: [3]

(8,9,1) (1,2,1) (3,5,2) (4,10,6) (3,4,1) (2,6,4)

6. Write short notes on: [1+1]

(a) LCS (b) MTP

7. Discuss and justify how an $O(n^2)$ algorithms can be faster than O(n) algorithm? [1]

8. Describe how ESF is different from other forms of sequence alignments? [2]