

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
MAKEUP EXAMINATION-May-2016

B.Tech. VI Semester (BI)

COURSE CODE:10B11BI614

MAX. MARKS: 25

COURSE NAME: Advanced Algorithms for BI

COURSE CREDITS: 04

MAX. TIME: 1.5 HRS

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Use of calculator is not allowed.

1. What are the basic characteristics of an algorithm? How we analyze algorithms? [3]
2. Describe exon chaining problem for gene prediction in eukaryotes with an example. [3]
3. Differentiate between Gibbs sampling and Greedy approaches for motif finding. Also discuss their respective computational complexities. Explain any one of these with a suitable example. [6]
4. What is test code statistics? How it can be implemented to solve genomic content predictions. [4]
5. Explain random projection algorithm for a motif of length 6 with any 2 mutations in it. Describe the whole process through hashing and bucketing schemes. [5]
6. Write pseudo code for Brute Force Motif Search Algorithm. Explain it with an example. [4]