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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -1 EXAMINATION- February 2020
B.Tech VIII Semester

MAX. MARKS: 15

COURSE CODE: 15B1WBI834

COURSE NAME: Computational Molecular Evolution

COURSE CREDITS: 03

MAX. TIME: 1 Hrs

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

(CO - 1, 2) [2*2=4]

Q.1. Define the following:

- (a) Nucleosome and its constituents
- (b) t-RNA structure and modified bases

(CO - 2) [1]

Q.2. What do you understand by Operon?

Q.3. Discuss molecular evolution journey through various discoveries, mechanisms, and evidences along with time period parameter.

(CO - 1-3) [4]

Q.4. Discuss a mathematical model for a biological sequence being split into two during the course of evolution.

(CO - 1-3) [2]

Q.5. Define following events w.r.t. evolutionary scenario:

(CO - 1-3) [1*4 = 4]

(i) Evolution and position of human on phylogenetic tree.

(ii) Orthologs and Paralogs.

(iii) How rate of evolution could be useful in detecting important genomic clues through a microorganisms.

(iv) Gene expression levels and their evolutionary associations.
