

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1

M.Tech (I semester) and BTDD (IX semester)

COURSE CODE: 13M11BT112

MAX. MARKS: 15

COURSE NAME: Advanced Bioinformatics

COURSE CREDITS: 4

MAX. TIME: 1 hour

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

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1. Explain the meaning of precision medicine and its relevance in the realm of modern biotechnology. Which institutes in India are working in this area? (2+1)
2. Discuss the advantages of using RNA-seq technology over traditional microarrays. (2)
3. Compute the semi-global alignment for the following sequences, given that match=4, gap= -1, mismatch = -2. Why do we prefer this over global alignment in some cases? (5)

AAAGTGG

GCAGG

4. Distinguish between the following types of matrices: (5)
  - (a) PAM and VTML matrices
  - (b) DNA identity matrix and PUPY matrix