JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2024

M.Tech-I Semester (BT)

COURSE CODE(CREDITS): 13M11BT112 (3) MAX. MARKS: 15

COURSE NAME: Advanced Bioinformatics

COURSE INSTRUCTORS: Dr. Raj Kumar MAX. TIME: 1 Hour

Note: (a)All questions are compulsory.

(b)Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q1. Describe important pillars of systems medicine. [2]

Q2. List the names of any three biological databases and provide a brief description of the type of data each database contains. [2]

Q3. Write a program to sort items in the given vector in descending order. [1]

```
numbers <- c(13, 3, 5, 7, 20, 2)
```

Q4. Demonstrate how will you convert the list data into vectors? [1]

```
list_data <- list("Red", c(21,32,11), 119.1)
```

Q5. Create a 4×4 matrix of your choice and demonstrate slicing of a 2×2 matrix subset using R-programming. [2]

Q6. Create a DataFrame in R to store details about a class of students. The DataFrame should include the following columns: 'Enrollment', 'Name', and 'Age'. Also demonstrate how will you add another column named 'Gender' into the dataframe? [2]

Q7. Give brief notes on the following topics in R-programming: [1×5 = 5]

a) Data types in R
b) Rscript file example
c) Adding a comment in R-programming
d) List the preloaded variables in R
e) Assignment Operators