0102E1294

Candidate's Seat No :_____

MSc Sem.-1 Examination

401

Bio-Informatics

Time : 2-30 Hours] **February-2025** **[Max. Marks : 70**

Question 1: Answer the following.

I. Describe the characteristics of a phylum which includes unicellular organisms. (7)

II. Explain: Bentham & Hooker Classification plant classification system. (7)

OR

I. Give a detailed account of the largest phylum of the animal world whose animals live in a greater variety of habitats than the members of any other phylum. (7)

II. Describe: Algae in diversified habitat. (7)

Question 2: Answer the following

I. Describe what are networks and types of networks using examples. (7)

II. Describe hardware and software. Describe any two input / output devices. (7)

OR

I. Describe what is a programming languages and types of programming languages (7)

II. Describe what is an Operating System. What type of software is OS. Give examples of different types operating system. What is booting an operating system (7)

Question 3: Answer the following

I. Define primary databases in bioinformatics. Explain their purpose and importance with examples. (7)

II. Compare PAM and BLOSUM matrices in terms of their construction, applications, and suitability for sequence alignment. (7)

OR

I. Explain the importance of open-access repositories in biological literature. Provide examples. (7)

II. Describe Multiple Sequence alignment in detail and write about any one database or tool. (7)

Question 4: Answer the following

I. Define the Binomial Distribution and solve the following example
If a coin is tossed 4 times, then find the probability of getting exactly two heads. (7)

II. Explain the concept of One-Way ANOVA and its applications. How is the F-ratio calculated in a One-Way ANOVA, and what does it signify? (7)

OR

I. Explain the Interquartile Range, Mean absolute deviation, and Variance with example. (7)

II. A researcher documented the variety of fish species inhabiting the oceanic waters. The data are as follows. What is the value of the measure of central tendency in given data and find the

(P.T.O)

Average with the step-deviation method? (7)

Ocean surface (m)	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Number of parrot species	55	110	250	70	85	30	28	15	8

Question 5: Answer the following (Any seven) (14)

1. Give short information about the digestive and circulatory systems of Molluscans.
2. Write about the circulatory system of Annelida.
3. Give the name of some fresh water algae.
4. Agar-Agar is obtained from which algae and for it is used.
5. Explain PSI-Blast algorithm.
6. Differentiate between primary and secondary databases in bioinformatics.
7. What is the Measure of Central tendency
8. Explain the H0 and H1 hypothesis.
9. Define: Variance and Coefficient of Range
10. SPSS stands for _____
11. The RAM and ROM are called as _____ memory
12. Briefly define the Bus Topology.