

M.Sc. (Botany) Semester - 1 (CBCS) Examination
OCT/NOV-2025 (AS PER SYLLABUS YEAR JUNE-2023)
Biostatistics, Bioinformatics & Biosafety (Ict (New-23))

Time: 2:30 Hours**Marks:70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que.1 Answer the following (any seven out of eight – 02 marks each) (14)

- 1) Define GAEC.
- 2) Explain primary containment
- 3) Explain types of sequencing approach
- 4) Explain the role of RCGM.
- 5) Write down importance of Graph
- 6) Explain formula of Standard deviation (Population).
- 7) Find the mean, median, mode and range for each set of numbers.
95, 88, 76, 62, 55, 66, 78, 89, 95, 95
- 8) Write down merits of Mode

Que.2 Answer the following (any two) (14)

- 1) Explain and calculate confidence interval with suitable example.
- 2) Find the variance and standard deviation for the following rain fall in Girnar region and discuss your results.
25, 38, 46, 51, 62, 73, 89, 91, 83, 77.
- 3) Calculate the Coefficient of Variation (CV) for the following two marks data of paper 104 as a sample data set and give your interpretation from results.
Class A - 83, 71, 67, 53, 45, 34, 48, 52, 67, 70, 83.
Class B - 87, 66, 57, 67, 75, 88, 93, 94, 92, 88, 99.

Que.3 Answer the following (any two)

- 1) Write a note on Student's T-test? Discuss paired student's T-test with below data (use 1.833 t critical/table value) (14)
Plant heights in cm: 58, 61, 46, 52, 69, 74, 57, 91, 33, 18
Plant heights after organic farming: 92, 85, 81, 64, 66, 64, 70, 83, 59, 40
- 2) Calculate un-paired student's T-test with below two different Waterfall sample from Meghalaya and Girnar region sites pH data (use 1.746 t critical/table value), set hypothesis and evaluate after result.
Water sample:
Meghalaya area 1: 6.1, 4.1, 6.9, 7.2, 6.9, 7.4, 4.2, 7.7 and 8.1
Girnar area 2: 6.7, 7.0, 7.2, 6.3, 8.7, 9.9, 6.1, 8.2 and 9.6
- 3) What is the ANOVA test? Discuss in detail.

Que.4 Answer the following (any two) (14)

- 1) Explain multiple sequence alignment.
- 2) Explain the secondary database in detail.
- 3) Write note on global alignment

Que.5 Answer the following (any two) (14)

- 1) Write note on risk assessment.
- 2) Explain the secondary containment of biosafety.
- 3) Discuss the biosafety level of specific microorganism with suitable example
