Set 'A'

B. Sc. (Hons.) BOTANY/V Sem

Unique Paper Code: 32167502, DSE-2

Paper Title – Biostatistics

Time: 3 + 1 Hours **Maximum Marks: 75**

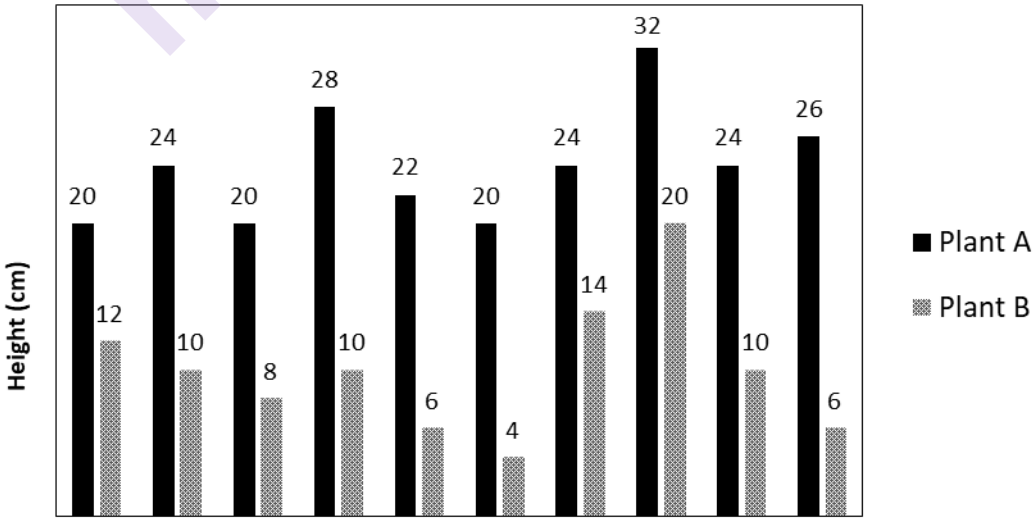
(Write your University Roll number, Paper Title and Unique Paper Code on top of the answer sheet)

Attempt any four questions in all. All questions carry equal marks.

Q. 1) Give the importance of graphic representation of data? Compare between frequency polygon and histogram. Draw a histogram and the frequency polygon separately for the following distribution of marks of 150 students:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of students	8	22	28	44	30	15	2	1

Q.2) The data for height (cm) for two plants species 'A' and 'B' is represented in the graph



Answer the following questions based on above graph:

(i) Calculate the mean, mode and median height for both the plant species.
(ii) Determine which of the plant species have more consistent height and why?

Q.3) Explain the terms Range, Mean Deviation and Quartile deviation. Also discuss their merits. Calculate the quartile deviation from the following data.

Length of earthworm	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65
Frequency	4	3	8	9	14	3	3	2	2	2

Q.4) What is Correlation analysis? What are the different types of correlation? Mention the various methods of studying correlation. What is the basic difference between Karl Pearson's Correlation co-efficient and Spearman's Rank Correlation co-efficient with suitable example?

Q.5) Define Chi-square test. Discuss its application in the field of genetics. In the garden pea, yellow cotyledon colour is dominant to green, and inflated pod shape is dominant to the constricted form. Considering both of these traits jointly in self-fertilized dihybrids, the progeny appeared in the following numbers. Do these genes assort independently? Support your answer using appropriate analysis.

green, inflated	193
yellow, constricted	184
yellow, inflated	554
green, constricted	61

Q.6) Define regression. Mention the various kinds of regression analysis. The following data were recorded on the number of seeds per plant in one of the varieties of lentil. Calculate the regression co-efficient and find out its significance.

No. of flowers	22	24	25	11	12	9	13	14	15	16
No. of seeds	40	42	45	66	55	60	70	75	62	70