

# B.Sc. SEM-V (Hons.) Examination-2021(CBCS)

## Subject- Botany (Hons.)

### Paper – DSE-2 (Biostatistics)

Full Marks –40

Time – 2hrs

1. Answer any eight of the following:

8 X5=40

i) Define standard deviation. Mention the steps of calculation of standard deviation in a small size sample.

ii) Define Regression. Find out the correlation coefficient between x and y where y on x be  $y=0.57x + 6.93$  and the regression equation of x on y be  $x=1.12y - 2.46$ .

iii) What is central tendency? Distinguish between Geometric mean and Arithmetic mean. Give two demerits of Arithmetic mean.

iv) In a hybridization experiment among the  $F_2$  hybrid seeds, the following results are observed:

Brown and Large	-	54
Brown and Small	-	18
White and Large	-	18
White and Small	-	6

Make a pie diagram of this observation.

v) What is Mode? Write down the Merits and demerits of mode.

vi) Distinguish between skewness and Kurtosis with suitable diagram.

vii) What is Student's 't'-test? Write down the steps followed for calculation of 't'.

viii) What is coefficient of variation? Calculate coefficient of variation of the following observed data in a population of the seed number per fruit:

7,9,6,8,6,5,7,8,6,8

ix) Write short notes on significance of ANOVA.

x) Write a short note on application of Biostatistics in plant breeding.

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**B.Sc. (Hons.) Semester-V Exam-2021(CBCS)**

**Subject- BOTANY (Honours)**

**Paper-DSE 2 (Bioinformatics)**

TIME-2 hrs

FM-40

**Answer any eight questions from the following:**

**5×8=40**

1. Discuss the different scopes of bioinformatics in plant science.
2. Name any four tools and databases of NCBI.
3. Write down the significance of biological databases.
4. Write a note on the architecture of BLAST.
5. What are the major resources of the DNA Data Bank of Japan (DDBJ)?
6. How can you build a phylogenetic tree for a set of related sequences?
7. Write a note on the database of Protein Information Resource (PIR).
8. What is the importance of multiple sequence alignment in bioinformatics study?
9. Write a short note on scoring matrices.
10. Briefly discuss the importance of QSAR techniques in drug designing.

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**B. Sc. (Honours ) Semester- V, Examination- 2021(CBCS)**

**Subject- Botany**

**Paper- DSE-2 (Natural Resource Management)**

**Time: 2 hrs.**

**F.M.- 40**

**Answer any eight of the following:**

**5 × 8 = 40**

1. Describe different approaches to sustainable management of natural resources.
2. Briefly describe the causes of soil degradation.
3. Comment on the importance of wetlands.
4. Mention different types of biodiversity.
5. Describe different anthropogenic causes on the loss of biodiversity.
6. Mention four forest products and describe their utilities.
7. Comment on the causes for the depletion of forests.
8. Give two examples of renewable energy sources. Describe the advantages of their utilization.
9. What is an ecological footprint? Describe its significance in maintaining the balance of an ecosystem.
10. Describe the important national and international efforts in natural resource management.

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