



বিদ্যাসাগর বিশ্ববিদ্যালয়  
**VIDYASAGAR UNIVERSITY**  
**Question Paper**

**B.Sc. Honours Examinations 2022**

(Under CBCS Pattern)

**Semester - VI**

**Subject: BIOTECHNOLOGY**

**Paper : DSE 4-T**

**(Plant Diversity - II)**

**Full Marks : 40**

**Time : 2 Hours**

*Candidates are required to give their answer in their own words as far as practicable.*

*The figures in the margin indicate full marks.*

**Part - A**

Answer any **four** questions from Part A :

5×4=20

1. Write a short note on seed habit of *Selaginella*. 5
2. Write a short note on life history of *Equisetum*. 5
3. Describe the gametophyte of *Pteris* with suitable diagram. 5
4. Explain the morphological nature of rhizophore. 5
5. Discuss in brief the early events of colonization of land plants. 5
6. Write short notes on hydrasperman reproduction. 5

### Group - B

Answer any *two* questions from Part B :

10×2=20

1. Differentiate the stem anatomy of *Pinus* and *Cycas*. 10
  2. State the organ genera of *Williamsonia seawardiana*. What is its distribution in space and time ? Describe with labelled sketches its male fructification. 3+2+5
  3. Give an account of the development of the male and female gametophytes of *Pinus*. Describe the anatomical structure of the leaf of *Pinus*. 5+5
  4. State the geographical distribution of *Cycas species* in India. State the economic importance of gymnosperms with examples. 5+5
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**Or,**  
**Paper : DSE - 4T**  
**(Bio-Statistics)**

Full Marks : 40

Time : 2 Hours

**Group - A**

Answer any *four* questions : 5×4=20

1. What are correlation and correlation co-efficient ? What is meant by the value of correlation coefficient '+1' ? (2+2)+1
2. Explain random sampling with suitable example. 5
3. What is standard error ? How it can be minimized ? 2+3
4. Explain populations and samples in statistics. 5
5. What is Histogram ? How it is drawn ? 2+3
6. Differentiate between : qualitative vs quantitative data, mean vs mode. 2.5 + 2.5

**Group - B**

Answer any *two* questions : 10×2=20

1. Determine the median and standard deviation of the following scores of weight (in kg) of human : 75, 82, 64, 85, 59, 60, 72, 67, 55, 90, 83, 61 5+5
  2. What is Null hypothesis and alternate hypothesis in statistics ? Write in brief about Normal distribution. 4+6
  3. Why Chi-square test for goodness of fit is carried out ? What is one tail and two tail t-test ? What is degree of freedom in statistics ? 4+4+2
  4. Two curly-winged flies when mated produced 60 curly-winged and 36 straight-winged progeny. Use a chi-square test to determine whether these numbers fit a 3 : 1 ratio or not ? (Critical value of chi-square at 0.05 for df 1 is 3.84). 10
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