

**2022**  
**B.A./B.Sc.**  
**Sixth Semester**  
DISCIPLINE SPECIFIC ELECTIVE – 3  
**BOTANY**  
*Course Code: BOD 6.11*  
(Research Methodology)

*Total Mark: 70*  
*Time: 3 hours*

*Pass Mark: 28*

*Answer five questions, taking one from each unit.*

**UNIT-I**

1. Explain the meaning of research. Discuss the difference between descriptive and analytical research using appropriate examples. 4+5+5=14
2. Differentiate between research method and methodology. Describe the interview and questionnaire methods for data collection. 6+4+4=14

**UNIT-II**

3. Explain the various hazard symbols commonly found on reagent bottles. Why is it important to know the details of such labels? 10+4=14
4. Define molarity and normality. Calculate the required volume of 98% sulfuric acid ( $H_2SO_4$ ) solution to prepare 500 ml of 0.5 M solution. Given, density of  $H_2SO_4$  = 1.84 g/ml; atomic mass (g/mol) of S = 32.065, O = 15.9994, H = 1.00794. 4+10=14

**UNIT-III**

5. Write a note on the tabulation of statistical data. What is the significance of a scale bar? 10+4 =14

6. Write notes on the following: 7×2=14  
(a) Fixation and clearing  
(b) Tissue dehydration using graded alcohol

#### UNIT-IV

7. Write a note on any one of the following: 14  
(a) Reactive dyes  
(b) Fluorochromes
8. State the applications of cytogenetic techniques with squashed plant material. Explain the detailed procedure of the acetocarmine squash method. 4+10=14

#### UNIT-V

9. What is scientific writing? Write a note on how numbers and nomenclature are used in scientific writing. 2+12=14
10. Write notes of the following: 7×2 =14  
(a) Plagiarism  
(b) Referencing
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