

**2024/TDC (CBCS)/EVEN/SEM/  
BOTDSE-603T (A/B)/038**

**TDC (CBCS) Even Semester Exam., 2024**

**BOTANY**

**( 6th Semester )**

**Course No. : BOTDSE-603T**

**( Research Methodology/Biostatistics )**

Full Marks : 50

Pass Marks : 20

**Time : 3 hours**

*The figures in the margin indicate full marks  
for the questions*

**Candidates have to answer either from  
Option—A or Option—B**

**OPTION—A**

**Course No. : BOTDSE-603T (A)**

**( Research Methodology )**

**UNIT—I**

**1. Answer any *three* of the following questions :**

**1×3=3**

**(a) Define research.**

**(b) What do you mean by literature?**

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- (c) What do you understand by reviews?
- (d) Name any two search tools for the collection of literature.

2. Answer any *one* question of the following : 2

- (a) What are quantitative research and qualitative research?
- (b) State the salient features of applied research.

3. Answer any *one* question of the following : 5

- (a) What do you mean by library research? Give a short account on the methods of library research.  $1+4=5$
- (b) Write notes on primary and secondary sources.  $2\frac{1}{2}\times 2=5$

#### UNIT—II

4. Answer any *three* of the following questions :  $1\times 3=3$

- (a) Define molar solution.
- (b) Write the function of micropipette.

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- (c) How will you prepare Ninhydrin 0.1%?
- (d) Draw the symbol of biohazard.

5. Answer any *one* question of the following : 2

- (a) Write the chemical formula of chloroform and state the possible risks in handling it.
- (b) Write about any two stains used in a botany laboratory.

6. Answer any *one* question of the following : 5

- (a) Define solution. State and describe the types of solutions containing a liquid solvent and a solid solute.  $1+4=5$
- (b) Give an account on at least five common toxic laboratory chemicals and safety measures in their handling. 5

#### UNIT—III

7. Answer any *three* of the following :  $1\times 3=3$

- (a) What is data?
- (b) What is tabulation?
- (c) Define a histogram.
- (d) State why pie diagram is also called angular diagram.

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8. Answer any one question of the following : 2

- (a) Mention different parts of a typical table.
- (b) Write a note on graph.

9. Answer any one question of the following : 5

- (a) Describe different steps involved in collection of data.
- (b) Write notes on ocular micrometer and stage micrometer.  $2\frac{1}{2} \times 2 = 5$

UNIT—IV

10. Answer any three of the following questions :  $1 \times 3 = 3$

- (a) Write the meaning of the Latin abbreviation, *in situ*.
- (b) What are 'nm' and 'µm'?
- (c) Define copyright.
- (d) What is a bibliography?

11. Answer any one question of the following : 2

- (a) What are the informations to be followed to make a good poster?
- (b) Write a note on plagiarism.

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12. Answer any one question of the following : 5

- (a) Describe the structure of a general scientific report/writing.
- (b) Describe the steps to make a good PowerPoint presentation.

UNIT—V

13. Answer any three of the following questions :  $1 \times 3 = 3$

- (a) What do you understand by 'model organism'?
- (b) Write the scientific name of fruit fly.
- (c) Write the scientific name of a plant widely used as a model plant in understanding the genetics and molecular biology of flowering plants.
- (d) What is tracer technique?

14. Answer any one question of the following : 2

- (a) State two applications of mass spectroscopy.
- (b) State two modern key biology research areas.

15. Answer any one question of the following : 5

- (a) What is genomics? Write a note on structural genomics.  $1 + 4 = 5$
- (b) Write notes on proteomics and its types.  $2 + 3 = 5$

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( Turn Over )



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OPTION—B

Course No. : BOTDSE-603T (B)

( Biostatistics )

UNIT—I

1. Answer any *three* of the following questions :

1×3=3

- (a) Define statistics.
- (b) What is biological measurement?
- (c) What is applied statistics?
- (d) What is discrete variable?

2. Answer any *one* question of the following :

2

- (a) What are population of sample in statistics?
- (b) Write a short note on uses of statistics.

3. Answer any *one* question of the following :

5

- (a) Discuss the role and limitation of biostatistics.
- (b) Write a brief note on different types of variables.

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UNIT—II

4. Answer any *three* of the following questions :

1×3=3

- (a) Define tabulation.
- (b) What do you mean by qualitative data?
- (c) What is textual presentation of data?
- (d) What is cumulative frequency?

5. Answer any *one* question of the following :

2

- (a) Write a short note on random sampling.
- (b) Distinguish between bar diagram and line diagram.

6. Answer any *one* question of the following :

5

- (a) What is data? Describe different types of classification of data. 1+4=5
- (b) What do you mean by textual presentation and graphical presentation of data? Write the advantages and disadvantages of graphical representation of data. 2+3=5

## UNIT—III

7. Answer any *three* of the following questions :

1×3=3

- (a) What is range?
- (b) Write the formula of standard deviation.
- (c) What is measure of dispersion?
- (d) What do you mean by standard error?

8. Answer any *one* question of the following : 2

- (a) Write a note on geometric mean.
- (b) State two merits and demerits of standard deviation.

9. Answer any *one* question of the following : 5

- (a) Define mean, median and mode. State the merits and demerits of median. 3+2=5
- (b) Write a note on absolute measures of dispersion you have studied.

## UNIT—IV

10. Answer any *three* of the following questions :

1×3=3

- (a) What is positive correlation?
- (b) What do you mean by zero correlation?

(c) What is regression line?

(d) What is multiple regression?

11. Answer any *one* question of the following : 2

- (a) Write the properties of regression.
- (b) Write a note on coefficient correlation.

12. Answer any *one* question of the following : 5

- (a) Discuss the relation between correlation and regression.
- (b) Discuss the different types of regression.

## UNIT—V

13. Answer any *three* of the following questions :

1×3=3

- (a) What is hypothesis?
- (b) What is null hypothesis?
- (c) What is student's *t*-test?
- (d) What do you mean by probability?

14. Answer any *one* question of the following : 2

- (a) Write a note on test of significance.
- (b) What is sample hypothesis? Give example.

15. Answer any one question of the following : 5

(a) Write a detailed note on chi-square test.

(b) Discuss the steps for calculation of t-test.

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