**2023/TDC(CBCS)/EVEN/SEM/
BOTDSE–603T(A/B)/233**

TDC (CBCS) Even Semester Exam., 2023

BOTANY

(6th Semester)

Course No. : BOTDSE–603T

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)

(Biostatistics)

SECTION—A

Answer any *fifteen* of the following questions :

1×15=15

1. What are variables?

2. What are quantitative variables?

(Turn Over)

(2)

3. What do you mean by statistics?

4. Write one limitation of statistics.

5. Define data.

6. What is discrete data?

7. What are the different types of data?

8. What do you mean by statistical sample?

9. What is central tendency?

10. What do you mean by test of significance?

11. Write one merit of median.

12. What is variation?

13. Define correlation.

14. What is correlation coefficient mean?

15. What does a correlation coefficient–1 refer to?

16. What is meant by regression analysis?

17. What is hypothesis?

(3)

18. Define biometry.

19. Chi-square test is used for which purpose?

20. What does $P = 0.05$ mean in t-test?

SECTION—B

Answer any *five* of the following questions : 2×5=10

21. Write the application of biostatistics in research.

22. How are variables selected?

23. How does data collection help in statistical analysis?

24. Write the importance of tabulation of data.

25. Differentiate between mean and median.

26. How is standard deviation calculated?

27. What are the applications of regression analysis?

28. What are the different types of correlation?

29. What are two characteristics of hypothesis?

30. Write the equations of t-test.

SECTION—C

Answer any *five* of the following questions : 5×5=25

31. Discuss application of statistics in biological research.

32. Discuss about different statistical methods used in scientific research.

33. Write detailed account on different methods for collection of data.

34. Add a note on sampling methods.

35. Write notes on the following :

    (a) Standard deviation

    (b) Mean and median

36. Write a note on coefficient of variation with examples.

37. Discuss the importance of correlation analysis with examples.

38. Write about different types and methods of correlations.

39. Discuss different types of hypothesis with example.

40. Write detailed note on student's *t*-test.

OPTION—B

Course No. : BOTDSE–603T (B)

(Research Methodology)

SECTION—A

Answer any *fifteen* of the following questions :
1×15=15

1. What do you mean by research?

2. What are the different types of research?

3. What do you mean by research methodology?

4. What do you mean by conceptual research?

5. What is molarity?

6. What is normal solution?

7. What do you mean by dilution of solution?

8. Name one common calculation used in botany laboratories.

9. Write one benefit of maintaining laboratory record.

(6)

10. What is tabulation of data?

11. What is graph?

12. Which instrument helps in taking images of tissue specimen?

13. What do you mean by scientific ethics?

14. What is nomenclature?

15. What is copyright?

16. What do you mean by scientific misconduct?

17. Which area of study covers under cell biology?

18. Write two key features of Biochemistry.

19. Name one popular model organism used in animal molecular biology research.

20. Name two key areas of researches in biology.

(7)

SECTION—B

Answer any *five* of the following questions :   2×5=10

21. What do you mean by applied research? Give an example.

22. Write two key features of field research.

23. Differentiate between molarity and normality.

24. Write two uses of Micropipette.

25. Write how bar diagram is prepared.

26. Which Microsoft application is used for presentation of data?

27. Write two importances of using 'Units' in scientific writing.

28. How does abbreviation help in scientific writings?

29. Write two applications of Proteomics studies.

30. Why are model organisms used in biological research?

(8)

SECTION—C

Answer any *five* of the following questions : 5×5=25

31. Differentiate between qualitative and quantative research. Write two applications of qualitative research.

32. What do you mean by literature review? Write the importance of literature review on scientific research.

33. Give a brief description about common toxic chemicals used in laboratories. What are the important safety measures taken for using toxic chemicals?

34. Write notes on the following :

    (a) Normality

    (b) Laboratory safety measures

35. How are data presented in the form of graphs and tables?

36. Write the application of scale bars in tissue imaging.

(9)

37. What is Plagiarism? How can it be minimised?

38. Write a detailed note on PowerPoint presentation.

39. Write key features of molecular biology. Mention important techniques used in molecular biology research.

40. Write key features of Genetics. How does this branch of biology help in scientific research?

★ ★ ★