TDC (CBCS) Even Semester Exam.,
September—2021

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)

(Research Methodology)

SECTION—A

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

1. What is research design?

2. What do you mean by research hypothesis?

3. What is quantitative research?

4. Give example of descriptive research.

5. What do you mean by fundamental research?

6. What is normal solution?

7. What is used to pipette chemicals and reagents?

8. What do you mean by 10% solution of alcohol?

9. Define molar solution.

10. Name two toxic chemicals.

11. What is histogram?

12. What do you mean by $1M$ H_2SO_4?

13. What do you mean by pie diagram?

14. Which scale bar is used in scaling tissue specimen?

15. Define line diagram.

16. How can tissue specimen be documented?

17. What is bibliography?

18. Write the name of an international journal in molecular biology.

19. What is copyright?

20. What is described in 'Introduction' in any scientific writing?

21. What is the difference between bibliography and references?

22. Photography is used to document what type of observation?

23. Define abstract.

24. Name one model organism used in genetics studies.

25. Name one widely used model plant used in plant molecular studies.

26. Name the subject that deals with the study of protein.

27. Name two key research areas in biology.

28. Write one characteristic feature of molecular biology.

29. Which study area is covered in physiology?

30. Give an example of scientific misconduct.

SECTION—B

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

31. What is experimental research? Give an example.

32. What do you mean by research methods? Give an example.

33. What are the two most common ways of accidents occur in the laboratory?

34. Write two importances of labelling the reagent bottles in laboratory.

35. What do you mean by tabulation of data?

36. What do you mean by scientific misconduct?

37. What is poster presentation?

38. Name two features of genomics research.

39. Why is field photography important?

40. Write the role of model organism in biological research.

SECTION—C

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

41. Differentiate between conceptual and empirical research. Give one example of each.

42. Give an account of the methods of library research for writing a scientific paper.

43. What are good laboratory practices?

44. Describe normality and molarity of acid and bases with examples.

45. How are 'graphs' generated for presentation of data?

46. Describe the methods of maintaining laboratory records.

47. Write about the contents of scientific writings.

48. Write a note on plagiarism.

49. Add a note on proteomics research.

50. Write the characteristic features and importance of molecular biology studies.

OPTION—B

Course No. : BOTDSE-603T (B)

(Biostatistics)

SECTION—A

Answer any *ten* of the following questions : 2×10=20

1. Define biometry.
2. What is a variable in statistics?
3. What are qualitative and quantitative variables?
4. What is continuous variable?
5. Distinguish between primary data and secondary data.
6. What are qualitative and quantitative data?
7. Write the main objectives of classification data.
8. What are the criteria for good sampling?
9. What do you mean by geometric mean?
10. What is coefficient of variation? Give the formula.

11. Write the merits and demerits of standard deviation.
12. What do you mean by measures of central tendency?
13. What do you mean by correlation?
14. State the significance of regression.
15. Write the formula for coefficient of correlation.
16. Define regression line.
17. What is hypothesis in biostatistics?
18. What is null hypothesis?
19. What do you mean by test of significance?
20. Write a note on Student *t*-test.

SECTION—B

Answer any *five* of the following questions : 6×5=30

21. What are the basic principles of statistical methods? Discuss the different types of statistical methods. 2+4=6
22. Give an account on the variables, its functions and limitation. 6

23. Give a brief account on presentation of data. 6

24. What is sampling? Discuss the different methods of sampling. 1+5=6

25. Define and explain mean, median and mode by mentioning its formula. 2+2+2=6

26. What do you mean by dispersion? Write the steps of calculation of standard deviation. 1+5=6

27. Explain the three different kinds of correlations with examples. 6

28. Give a comparative account on the correlation and regression. 6

29. Define chi-square test and mention its formula. Write the application of chi-square test. 3+3=6

30. What do you mean by chi-square test for goodness of fit? Explain with example. Mention the steps to test the goodness of fit. 4+2=6

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