Exam. Code : 210001
Subject Code : 5372

M.Sc. Botany 1st Semester

BOT-C516 : THEORETICAL BIOLOGY

Time Allowed—3 Hours] [Maximum Marks—50

Note :— Attempt all the parts of question 1 from Section-A, ***seven*** questions from Section-B and ***three*** questions from Section-C. Draw neatly labeled graphical sketches wherever required. Marks for questions are indicated in the paper.

SECTION—A

1. Write very briefly about each of the following :

   (i) Outcome

   (ii) Universe

   (iii) Log value

   (iv) Goodness of fit

   (v) Variable

   (vi) Y-intercept

   (vii) Replicate

   (viii) Exponent. 1×8=8

SECTION—B

2. What you do understand by linear function ? Illustrate with suitable examples.

3. Define quadratic equations. Give their equation and graphic form.

4. What is sine function ? Give its equation and graphical form.

5. What is definite integral ? Explain with regard to mathematical limits.

6. What is differentiation ? Elucidate with the help of an example.

7. What are logarithms ? Elucidate the concept with suitable example.

8. What is chi square test ? Elucidate with hypothetical data.

9. Taking hypothetical data, illustrate the application of 't-test' for paired data.

10. Elucidate the concept of second derivative in calculus.

11. Elucidate the difference between permutations and combinations. 3×7=21

SECTION—C

12. What is probability ? Elucidate the multiplication law of probability.

13. What are mathematical limits ? Illustrate the concept and its application in integration.

14. What is meant by probability distribution ? Illustrate with any one of the distributions from your syllabus.

15. What is one way ANOVA ? Elucidate the concept with the help of hypothetical data.

16. What is linear regression ? Elucidate the concept and the procedure with hypothetical data. 7×3=21