



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY

FIFTH SEMESTER – APRIL 2019

16UPB5ES03– BIOINFORMATICS AND BIOSTATISTICS

Date: 24-04-2019
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

Part A

Answer the following, each within 50 words

(10 x 2 = 20 Marks)

1. What are primary databases?
2. List the online journal databases.
3. What is dot plot?
4. Write notes on phylogenetic tree.
5. What is ORF?
6. Differentiate exon and intron.
7. What is data?
8. Find the median of the following: 4, 5, 7, 8, 11, 12, 14, 15, 19, 20, 10, 16, 17.
9. Define population.
10. List the types of correlation in data.

PART B

Answer the following, each within 500 words. Draw diagrams and flowcharts wherever necessary:

(5 x 7 = 35 Marks)

11. (a) Write short notes on the basics of internet.

OR

- (b) Give a brief account on the levels of protein structure.

12. (a) Write notes on Needleman & Wunsch algorithm.

OR

- (b) Give a brief note on BLAST and FASTA alignment methods.

13. (a) Write short notes on protein visualization by Rasmol.

OR

- (b) Discuss briefly on Prosite and Pfam databases.

14. (a) Find out the value of the median from the following data:

No. of flowers	12	8	17	10	11	16	18	14	6	7
No. of plants	39	33	42	40	47	42	60	50	22	25

OR

(b) Calculate the variance, coefficient of variation and standard deviation from data recorded on respiration rate per minute of 10 persons:

Respiration/minute = 22, 22, 20, 24, 16, 17, 18, 19, 21,21.

15. (a) Give a brief account on the steps involved in ANOVA.
OR
(b) Write short notes on basics of SPSS and its applications.

PART C

Answer any three of the following, each within 1200 words. Draw diagrams and flowcharts wherever necessary. (3 x 15 = 45 Marks)

16. Discuss in detail on the primary and secondary databases.
17. Give a detailed account on the multiple sequence alignment using ClustalW.
18. Describe the homology modeling and gene prediction methods.
19. Write in detail on the collection and presentation of data.
20. Give an account on the types of sampling methods.
