LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – **NOVEMBER 2019**

17UPB5ES03 – BIOINFORMATICS AND BIOSTATISTICS

Date: 06-11-2019   Dept. No.   Max. : 100 Marks
Time: 09:00-12:00

PART – A

Answer the following, each within 50 words.   *(10 x 2 = 20 marks)*

1. What is meant by annotation?

2. Expand URL and HTML.

3. What is sequence alignment?

4. Write notes on dot matrix.

5. List any two secondary structures of proteins.

6. Comment on PDB.

7. What is a random sample?

8. Find out the coefficient of range for the following data:28, 30, 35, 27, 37, 45, 40, 46, 35, 26

9. Mention the types of correlation.

10. What is a poisson distribution?

PART – B

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

(5 x 7 = 35 marks)

11. a) Give a brief account on the DNA sequence databases with examples.
              Or
    b) Write a short note on the use of internet in bioinformatics.

12. a) Give an account on BLAST and FASTA.
              Or
    b) Write notes on the phylogenetic tree construction.

13. a) Discuss briefly on the structure of the gene.
              Or
    b) Give a brief account on homology modelling.

14. a) Calculate the arithmetic mean from the following data:

No. of seeds per plant	100-200	200-300	300-400	400-500	500-600	600-700
No. of plants	8	18	20	26	30	28

              Or
    b) Discuss briefly on the methods for the presentation of data.

15. a) Write short notes on i) SPSS   ii) MS Excel

Or

b) Calculate the correlation coefficient of the following data.

Fertilizers used (metric tonnes)	15	18	20	24	30	35	40	50
Productivity (metric tonnes)	85	93	95	105	120	130	150	160

PART – C

*Answer **any three** of the following, each within 1200 words. Draw diagrams wherever necessary*

(3 x 15 = 45 marks)

16. Discuss in detail on the structural organisation of proteins.

17. Give a detailed account on PAM and BLOSUM matrices.

18. Discuss in detail on the strategies of gene prediction using bioinformatics tools.

19. Calculate the mean, variance, standard deviation and the coefficient of variation of the following data

x	51-55	56-60	61-65	66-70	71-75	76-80	81-85
f	5	8	9	11	8	6	3

20. Give a detailed account on the types of sampling methods.

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