



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – APRIL 2016

PB 5413 - BIOINSTRUMENTATION & BIOSTATISTICS

Date: 29-04-2016
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

PART A

Answer the following, each within 50 words only

(10 x 2 = 20)

1. Define pH.
2. What is lyophilization?
3. Define luminometry.
4. List any two uses of spectroscopy.
5. Expand PAGE and AGE.
6. What is ion-exchange chromatography?
7. Define the term data.
8. Find out the range for the given data: 96, 54, 32, 66, 33, 20, 10, 89, 21.
9. What is binomial distribution?
10. List out the sampling methods.

PART B

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

(5 x 7 = 35)

11. (a) Explain the working principle and application of differential centrifugation.

Or

- (b) Give a brief account on sonication.

12. (a) Describe the working principle of the double beam spectrophotometer.

Or

- (b) Write short notes on IR spectroscopy.

13. (a) Give a short note on thin-layer chromatography.

Or

- (b) Describe briefly the principle of gel filtration chromatography.

14. (a) Calculate the arithmetic mean for the following data.

x	1	2	3	4	5	6	7	8	9	10
f	26	22	29	21	30	18	19	30	32	34

Or

- (b) Discuss briefly the different methods for presentation of data.

15. (a) Write short notes on ANOVA.

Or

- (b) List the various application of computers in biostatistics.

PART C

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

16. Write in detail on the working principle and applications of pH meter.
17. Elaborate on the working principle and applications of MALDI-TOF.
18. Explain the working principle and applications of HPLC.
19. Calculate the standard deviation and variance for the following data.

<i>x</i>	2	4	6	9	11	6	5	3
<i>f</i>	21	24	27	31	35	20	17	11

20. Give a detailed account on population, sampling and the types of distribution.
