



# LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

**FIFTH SEMESTER – APRIL 2019**

**PB 5413– BIOINSTRUMENTATION & 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. State *Beer – Lambert* 's law.
2. List the types of rotors.
3. What is electromagnetic radiation?
4. Define luminescence.
5. What is Rf value?
6. Expand PAGE and AGE.
7. Define primary and secondary data.
8. Find the median of the following data: 23, 77, 85, 56, 78, 92, 45, 66, and 90.
9. Define the term population.
10. What is a poisson distribution?

## PART – B

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

(5 X 7 = 35 Marks)

11. (a) Describe the principle and process of sonication.  
Or  
b) Explain the principle of differential centrifugation.
12. a) Give a brief account on luminometry.  
Or  
b) Write notes on infrared spectroscopy.
13. a) Describe the principle of Thin Layer Chromatography.  
Or  
b) Explain the working principle of Gas Chromatography.
14. a) Calculate the arithmetic mean of the following data:

Plant height (cms)	0-10	10-20	20-30	30-40	40-50	50-60
Number of varieties	5	10	25	30	20	10

Or

- b) Write notes on the presentation of data.
15. a) Explain briefly the different methods of sampling.  
Or  
b) Write notes on ANOVA.

**PART – C**

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

(3 x 15 = 45 marks)

- 16. Give an account on the working principle of the pH meter.
- 17. Describe the working principle of single and double beam spectrophotometer.
- 18. Explain in detail the process and principle of HPLC.
- 19. Calculate the standard deviation and coefficient of variation for the following data:

<b>Age</b>	20-30	30-40	40-50	50-60	60-70	70-80	80-90
<b>No. of members</b>	3	61	132	153	140	51	2

- 20. Give a detailed account on MSEXcel and SPSS.

\*\*\*\*\*