LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTHSEMESTER – APRIL 2017

PB 5413- BIOINSTRUMENTATION & BIOSTATISTICS

Date: 02-05-2017   Dept. No.   Max. : 100 Marks
01:00-04:00

PART – A   (10 x 2 = 20 marks)

Answer the following, each within 50 words.

1. What is *rpm*?

2. Write notes on lyophilization.

3. Mention any two enzymes used in luminometry.

4. What is densitometry?

5. Give any two applications of chromatography.

6. What is electrophoresis?

7. Define probability.

8. What is primary and secondary data?

9. Calculate the range for the following data: 64, 53, 72, 99, 32, 44, 17, 66, 33, 88.

10. Cite the different types of distribution.

PART – B   (5 x 7 = 35 marks)

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

11. a) Describe the process of sonication.

Or

b) Give a short account on differential centrifugation.

12. a) Explain the working principle of infra-red spectroscopy.

Or

b) Describe the working principle of double – beam spectrophotometer.

13. a) Give a brief account on gel filtration chromatography.

Or

b) Describe agarose gel electrophoresis.

14. a) Calculate the median of the following data:

No. of angular seeded plants	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) Describe the methods for collection and presentation of data.

15. a) Calculate the coefficient of correlation for the following:

Price(Rs.)	8	10	15	17	20	22	24	25
Supply	25	30	32	35	37	40	42	45

Or

b) Write notes on sampling methods.

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

16. Draw and describe the principle and working of the pH meter.

17. Describe in detail on the principle and applications of mass spectrometry.

18. Write in detail on working principle and applications of HPLC.

19. Calculate the standard deviation and coefficient of variation for the following data:

Age (yrs)	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of members	3	61	132	153	140	51	2

22. Give an account on the applications of MS Excel and SPSS in statistical applications.

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