LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FOURTH SEMESTER – **APRIL 2018**

16UPB4ES01– BIOLOGICAL TECHNIQUES

Date: 23-04-2018 Dept. No. Max. : 100 Marks

Time: 09:00-12:00

PART – A **(10 x 2 = 20 Marks)**

Answer the following, each within 50 words.

1. List out the parts of a microscope.
2. What is double staining?
3. Write notes on squash technique.
4. What is fixation?
5. Cite the principle of centrifugation.
6. What is meant by freeze drying?
7. List the components of the electromagnetic spectrum.
8. Write notes on spectroflurimetry.
9. What is meant by Rf value?
10. List any 2 uses of gel filtration chromatography.

PART – B **(5 X 7 = 35 Marks)**

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

11. (a) Discuss briefly on the principles of microscopy.

(or)

(b) Write briefly on the working principle of camera lucida.

12. (a) Give a brief account on the processing methods in herbarium preparation.

(or)

(b) Write briefly on the whole mounts and maceration methods of angiosperm material.

13. (a) Write short notes on differential centrifugation.

(or)

(b) Discuss briefly on the methodology of sonication.

14. (a) Give a brief account on atomic absorption spectroscopy.

(or)

(b) Write briefly on the working of the single beam spectrophotometer.

15. (a) Explain the technique of ion-exchange chromatography.

(or)

(b) Write short notes on electrophoresis.

PART – C (3 X 15 = 45 Marks)

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

16. Discuss in detail on the design and applications of the haemocytometer.

17. Give a detailed account on the methodology of karytotyping and idiogram.

18. Draw and describe the working principle and applications of the pH meter.

19. Discuss in detail on the principle of luminometry and its applications.

20. Write short notes on the following: i) Thin – layer chromatography

ii) Polymerase Chain reaction.

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