

Reg. No .....

Name .....

18P442

**M Sc DEGREE END SEMESTER EXAMINATION - MARCH 2018****SEMESTER 4 : BOTANY****COURSE : 16P4BOTT16 ; BIOSTATISTICS, MICROTECHNIQUES AND BIOPHYSICS***(For Regular - 2016 admission)*

Time : Three Hours

Max. Marks: 75

**Section A****Answer any 8 (2 marks each)**

1. What is Zirkle- Erliki fluid?
2. What is tertiary butyl alcohol method?
3. Explain glycerol-xylol method of mounting.
4. What is dichroic mirror? Explain its use in microscopy.
5. Give an account of density gradient centrifugation.
6. Differentiate between the properties of gel used in PAGE and AGE.
7. Briefly explain about the characteristics of scientific data.
8. Differentiate standard deviation and standard error.
9. Differentiate dependent and independent variables.
10. Explain a scatter plot.
11. What is randomized block design?
12. What is F test?

**(2 x 8 = 16)****Section B****Answer any 7 (5 marks each)**

13. Write the composition and uses of FAA, FPA, and Carnoy's Fluid.
14. Explain how the specimens are fixed, dehydrated and embedded for TEM.
15. What is maceration? Explain different methods of maceration.
16. Write a brief account on the principles and aberrations of light microscope.
17. Describe the principles and application of TEM.
18. Write critical notes on PFGE and PAGE.
19. Discuss about the measures of dispersion in statistical analysis.
20. Explain the formula  $y = \alpha + \beta x + \varepsilon$
21. Discuss the applications of probability theory.
22. Discuss about different probability theories.

**(5 x 7 = 35)****Section C****Answer any 2 (12 marks each)**

23. Write an essay on natural and synthetic stains. Explain the principle of staining.

OR

24. What are immunoassays? Explain the working principal and applications of ELISA.

25. What are the important types of experimental designs in biostatistics and explain their respective roles in research?

OR

26. Write an essay on the tests of significances in biostatistics. Explain the uses and advantages of each tests.

**(12 x 2 = 24)**