LEAD CITY UNIVERSITY, IBADAN
Faculty of Sciences
Department of Microbiology/Biology

COURSE PARTICULARS

Course Title: Botanical techniques

Course Code: BOT 212

Lecturers:-

Name: Dr. B.A. Bamkefa

Qualification: B.Sc, M.Sc and Ph.D University of Ibadan. Nigeria

Phone number: 08035268612

Area of specialization: Botany, Phytopathology and Nematology

Name: Prof Allan Femi Lana

Qualification: B. Sc, M. Sc and Ph.D

Phone number: 08126262172

Area of specialization: Nematology and Virology

Course description: Botanical techniques is an experimental course where students have their hands on desk. It is a course essentiaal for all students in the Education Biology department, biology and microbiology. The course entails the general use of microtome, microscope and plant tissue culture.

Course Objectives: To ensure students are able to use common equipment in plant biology.

LECTURE PLAN

Teaching Plan:

Weeks1- 2**:** Use of micoscope, types, magnification and maintenance
Week 3: Use of microtome, types and advantages
Weeks 4 - 6: Plant sectioning and staining
Weeks 7 - 9: Micropropagation and importance
Weeks 10 - 12: Various methods to improve plant quality growth

Course Requirement/Assessment:

Assessment

Class attendance	5 marks
Tests and Assignments	35marks
Final Examination	60 marks
Total	100 marks

Reading List:

Dutta T. C. (2010) Botany for Degree students 6th edition

Section B:

Tutorial Questions:

1. Describe the various ways maintaining microscope in a humid environment

2. List five types of microscopes you know and describe measures taken to reduce error in their usage

3a.What is a microtome? List the types commonly available.

b. State the advantages of microtome sectioning over free hand sectioning

4. Discuss reasons for the following in plant tissue:

i, sectioning ii, staining iii, clearing iv, fixing

5a. What do you understand by the word micropropagation

b. List the importance of plant tissue culture

6.Compare and contrast the following:

i, Temporary and permanent staining

ii, progressive and regressive staining

7a. What is negative staining?

b. Discuss the perculiarities of phloroglucinol and haematoxylin

8. Discuss the role of growth hormones in plant tissue culture

9. Give a schematic diagram of a temporary staining procedure

10. Discuss various methods of improving plant quality growth

MARKING GUIDE

1. Description of microscope maintenance	20 marks
2. Different types of microscopes	10 marks
Precautions to reduce error	10 marks
	Total = 20 marks
3. Defining microtome	` 5 marks
Available types	5 marks
b, Advantages over free hand sectioning	10 marks
	Total = 20 marks

4. Reasons for sectioning, staining, clearing and fixing 5 marks x 4 = 20 marks

5. Micropropagation description 5 marks

b. Its importance 15 marks

Total = 20 marks

6. Comparing i.e similarities of each 5 marks x 2 = 10 marks

Contrasting i.e differences of each 5 marks x 2 = 10 marks

Total = 20 marks

7. Defining negative staining 5 marks

Peculiarities of each stain 7.5 marks x 2 = 15 marks

Total = 20 marks

8. Growth hormones and roles of each 20 marks

9. Diagramatic sketch of staining procedure 20 marks

10. Methods of improving plant quality growth 20 marks