FACULTY  SCIENCE

DEPARTMENT  BIOLOGICAL SCIENCES

MODULE  PLANT GROWTH AND DEVELOPMENT

MODULE CODE  MOL3832

DATE  JANUARY 2012

DURATION  3 Hours  MARKS  120

SECOND OPPORTUNITY

Examiner: Dr Chimwamurombe PM (University of Namibia)
Moderator: Prof B. Wingfield (University of Pretoria)

This question paper consists of 3 pages including this face page

Instructions
1...Carefully read all the instructions.
2...There are two sections in this paper.
3...Answer all questions in Section A and choose any two questions in Section B

UNIVERSITY OF NAMIBIA EXAMINATIONS
Section A

This section is worth 60 marks. Answer all questions

1. Describe tunica-corporus model and relate this to the transitional meristems. (6 marks)

2. Discuss Heyns’ concept of wall extensibility and suggest a model to explain cell wall loosening. (6 marks)

3. Describe the principles of totipotency in plants. (6 marks)

4. Compare the role of plant hormones in senescence and abscission. (6 marks)

5. Distinguish between shade-tolerant and shade-avoidance behaviour and explain the significance of these adaptations. (6 marks)

6. Refer to experimental evidence to describe the nature and action of statoliths in the gravitropic response of stems and roots. (6 marks)

7. Refer to experimental evidence to critically discuss light as a Zeitgeber. (6 marks)

8. Describe the role of flowering-time genes. (6 marks)

9. Explain the adaptive significance of biological clocks. (6 marks)

10. Using specific examples, explain the concept of cross-talk in the control of plant development. (6 marks)
Section B: Essays Section

*This section is worth 60 marks; Answer any two questions in this section.*

1. Write an essay explaining the role of second messengers in controlling plant growth and development. (30 marks)

2. Write an essay on the various plant movement types. (30 marks)

3. Discuss the role of cyclins and CDK's in the control of the cell cycle in relation to plant growth and development. (30 marks)