

## OLLSCOIL NA hÉIREANN

NATIONAL UNIVERSITY OF IRELAND, GALWAY

## SEMESTER II EXAMINATIONS, 2002

## SECOND-YEAR SCIENCE

## BOTANY

*BT207: Plant growth and development*

Professor M.J. Dring  
Professor M.D. Guiry  
Professor M. O'Connell  
Dr M. McDonald  
Dr J. Fuller

Time allowed: *Three hours.*Answer *four* questions, at least *one* from each section.

## SECTION A

1. Describe the chemiosmotic production of ATP in higher plants.
2. Compare the pathways of CO<sub>2</sub> fixation in C3 and C4 plants.
3. Show clearly how the photoconversion of phytochrome may control floral induction in higher plants.

## SECTION B

4. Give an illustrated overview of morphological variation in thalloid liverworts (Metzgeriales and Marchantiales).
5. Describe the main anatomical features of hardwoods. Refer, where appropriate, to the surface characteristics of wood that are associated with particular anatomical features.
6. Give an illustrated account of floral adaptations for insect pollination and provide examples from specific plant families
7. Write concise notes on **two** of the following:
  - (a) primitive versus advanced floral structure
  - (b) the Ranunculaceae
  - (c) the life cycle of pteridophytes