

NATIONAL UNIVERSITY OF IRELAND, GALWAY

SEMESTER II EXAMINATIONS, 1999

SECOND-YEAR SCIENCE

BOTANY

BT207: Plant growth and development

Professor P. Gahan
and the internal examiners

Time allowed: *Three hours.*

Answer *four* questions, at least *one* from each section.

SECTION A

1. Describe clearly the interactions of PS I and PS II in photosynthesis.
2. Discuss the mechanism of CO₂ fixation in C-4 plants.
3. Explain how the photoconversion of phytochrome may control floral induction in higher plants.
4. Consider the range of variation in reproductive structures within the Hepaticae (liverworts).

SECTION B

5. With regard to a ring-porous wood of your choice, give a concise account of the main cell types and their distribution as seen in typical microscopic sections.
6. Give an account of the evolution of floral structure in the Angiospermae with reference to examples with which you are familiar and to the main factors influencing this evolution.
7. Write concise notes on **two** of the following:
 - (a) the Pteridophyta life cycle;
 - (b) the Gramineae;
 - (c) Sternotribic pollination.