

2530021

THE UNIVERSITY *of York*

Degree Examination 2004

ENVIRONMENT DEPARTMENT

BSc in Environment, Economics and Ecology, Part II

FOREST MANAGEMENT

Time allowed: **two hours**

Answer **TWO** questions out of **FOUR**

*Pay adequate attention to spelling, punctuation and grammar, so that your
answers can be readily understood*

- 1 Discuss the history and importance of the use of forestry in agriculture.
- 2 Why should we conserve natural forests?
- 3 Forest products are a major component of the economies of Finland and Sweden. If you were the Minister for Forestry in Finland or Sweden, how would you reconcile the conflict between pressure for financial returns from forestry and the social need for forest conservation and recreation?
- 4
 - a) In considering whether or not a forest should be planted in the catchment of a hydro-power project, the engineers needed to calculate the potential energy of the water that would be lost from the plantation by evapotranspiration. The head of water is 190 m above the turbines. Given that the net loss of water over the catchment due to transpiration from the closed canopy forest is estimated to be 474 mm/year, and full loss only occurs at canopy closure after 12 years on a Sitka Spruce 50 year rotation, calculate the potential energy that could be derived from the water lost over the 50 year rotation in Gigajoules per ha. The force of gravity is 9.81 m/s. Show your working. (25% of marks).
 - b) What are the benefits of maintaining forests on water catchments? (75% of marks).