THE UNIVERSITY of York

Degree Examination 2004

ENVIRONMENT DEPARTMENT

BSc in Environment, Economics and Ecology, Part 1b

GEOGRAPHICAL INFORMATION SYSTEMS

Time allowed: **one and a half hours**

Answer any **two** questions

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

1 **[50 marks]** "Uncertainties and error are intrinsic to spatial data and need to be addressed properly, not swept away under the carpet of fancy graphics displays" (Burrough and McDonnell, 1997, p. 220). Discuss the uncertainties and errors intrinsic to such spatial data.

2 **[50 marks]** The first four of Rhind's 1990 classes of GIS operation are location, condition, trend and routing. Explain what these operations are and describe how a system such as Arc/Info can allow these operations to be performed using both vector and raster data.

3 **[50 marks]** Compare and contrast raster and vector methods for map overlay. Illustrate your answer with possible applications of different overlay techniques.

4 **[50 marks]** Discuss and compare vector and tessellation spatial data structures.