UNIVERSITY OF SOUTH AUSTRALIA

DIVISION OF INFORMATION TECHNOLOGY, ENGINEERING AND THE ENVIRONMENT

School of Geoinformatics, Planning and Building

Semester 1, 2002

Earth Data Management N: GEOE 3009

Time Allowed : 3 hours + 10 minutes reading time

General Instructions to Candidates

Total marks = 100

This examination paper contains five (5) questions. Candidates are required to attempt FOUR questions only.

All questions are of equal value.

Please ensure that the front of the answer book is completed with your name, student I.D. number, program, course name and section of the examination (if applicable).

Attempt any FOUR (4) of the following FIVE (5) questions.

Question 1 [25 marks]

a) Describe the main attributes required for an efficient land parcel identifier. Chose an identifier used in South Australia and assess its strengths and weaknesses in relation to these criteria.

[10 marks]

b) What are the major elements of data quality?

[8 marks]

c) What are the main requirements for the successful introduction of LIM policies and procedures into an organisation?

[7 marks]

Question 2 [25 marks]

a) What are the benefits of data standards for geographic information? Outline the obstacles to the successful introduction of data standards by data producers and the adoption of these standards by data users.

[12 marks]

b) What is data custodianship? Outline the seven principles of custodianship and describe the benefits that can be expected through the introduction of these principles.

[13 marks]

Question 3 [25 marks]

a) Describe the concept of the Property Cadastre. Why does the Property Cadastre provide effective integration between digital cadastral data and valuation data in SA?

[10 marks]

b) Briefly explain five key objectives of land information management (LIM).

[5 marks]

c) Why is it important to document the fitness for use of digital datasets?

[

5 marks]

d) What privacy issues are associated with public access to land-related data?

[5 marks]

Question 4 [25 marks]

a) Explain the function of an index in a database and indicate the benefits and liabilities of an index. Comment on the above benefits and liabilities in relation to a spatial index.

[15 marks]

b) What is a normalized database? Describe the benefits of normalising and comment on it's use in GIS databases.

[10 marks]

Question 5 [25 marks]

a) Describe the three common models for data sharing and comment on the relative merits of each model.

[15 marks]

b) Explain the methods of determining which data sharing model should be chosen for a given project.

[10 marks]