

UNIVERSITY OF SOUTH AUSTRALIA

School of Geoinformatics, Planning & Building

Spatial Systems 2N – 10226

EXAMINATION

Semester 1, 2001

Time Allowed: 2 hours + 10 minutes reading time

General Instructions to Candidates

Total Marks = 100.

Calculators are not required.

Attempt any all questions.

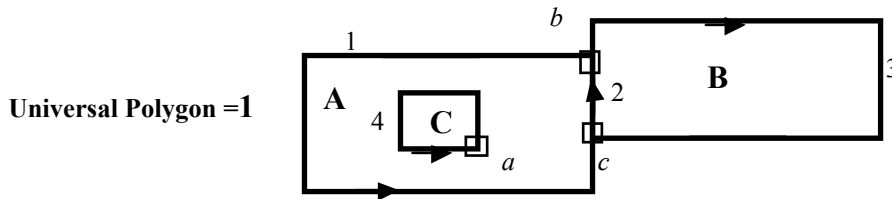
Marks for questions are indicated in brackets.

This is a closed book examination.

Please ensure that the front of answer book is completed with your student name, student I.D. number and course.

Question 1

Using the illustration provided below, describe the contents of the ArcInfo PAL.ADF, PAT.ADF & ARC.ADF files. Show two examples of data in the contents of each of these files (ie two polygon examples and two arc examples), using the labels and directions illustrated below. For convenience, the nodes are labelled with lower case letters, the polygons are labelled with upper case letters (except the universal polygon) and the arcs are labelled with numbers. Obviously you will **not** need to show actual coordinate data.



List the other supporting ArcInfo coverage files found in a polygon coverage and briefly state their purpose.

(25)

Question 2

Provide an algorithm, which describes the analytical processes the GIS software undertakes to construct the universal polygon, individual polygons, island polygons and attach labels. Assume the cleaning process has already taken place. Use the illustration in Question 1 above to assist with your description.

(25)

Question 3

(a) With a brief description and supporting diagrams showing input and output coverages, discuss the operation of the following ArcInfo vector overlay functions:

- Dissolve
- Union
- Identity
- Intersect

(25)

Question 4

Provide a detailed description of the operation of the **route** and **allocate** network functions. Include an **arc** attribute table and **node** turning table in your description.

(25)