

**UNIVERSITY OF SOUTH AUSTRALIA**

FACULTY OF ENGINEERING AND THE ENVIRONMENT

School of Geoinformatics, Planning and Building

Semester 1, 1998

**Geodetic Science 3 : 09092**

Time Allowed : 2 hours + 10 minutes reading time

**General Instructions to Candidates**

Total Marks = 100

Attempt ANY THREE questions.

All questions are of equal value.

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

**QUESTION 1**

Describe each of the following in the context of GPS surveying :

- a) pseudo-ranges;
- b) carrier beat phase measurements; and
- c) dilution of precision.

**QUESTION 2**

The systematic errors (biases) associated with the GPS measurement process can be divided into three categories :

- a) satellite dependent;
- b) observation dependent; and
- c) station dependent.

Describe, with the aid of diagrams, one (1) system error in each of the three categories.

**QUESTION 3**

The differencing of GPS measurements in various linear combinations will lead to the computation of precise baselines. Describe each of the following differencing techniques :

- a) single differencing;
- b) double differencing; and
- c) triple differencing.

**QUESTION 4**

The three segments of GPS are :

- a) space;
- b) control; and
- c) user.

Describe each of the three segments.