

THE HONG KONG POLYTECHNIC UNIVERSITY
DEPARTMENT OF LAND SURVEYING AND GEO-INFORMATICS

Programme	:	04001 MSc/PgD in Geomatics			
Subject Title	:	Spatial Data Acquisition			
Subject Code	:	LSGI522	Session	:	Semester 1, 2016/17
Date	:	17 December 2016	Time	:	19:00 - 22:00
Time Allowed	:	3 hours	Subject Examiner(s)	:	Dr. Charles Wong (LSGI) Dr. W B Xu (LSGI)

This question paper has a total of 5 pages.
(Some pages may be intentionally omitted.)

Instructions to Candidates : This paper has **TWO** sections, Section A and B.

Section A: **Multiple** Choice. Answer **ALL** questions.
Section B: Answer any **THREE** questions.

Total marks = 95.

Available from Invigilator : Nil

.../2

DO NOT TURN OVER THE PAGE UNTIL YOU ARE TOLD TO DO SO

Section A: Multiple choice (each question has only one correct answer). **Each question 1 mark, total marks 20.**

Question 1

They are all Multiple Choice questions.

.../3

They are all Multiple Choice questions.

.../4

- 4 -

They are all Multiple Choice questions.

.../5

Section B: Answer **Any THREE** questions. **Each question 25 marks.**

Question 2

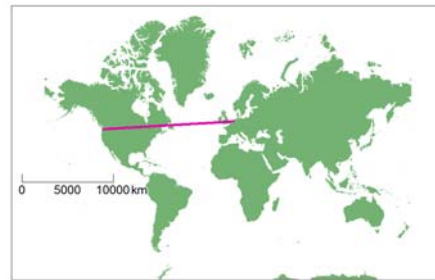
Elaborate eight major differences between airborne laser scanning and photogrammetric techniques for constructing 3D models.

Question 3

Seattle and Brussels are on nearly the same line of latitude. That means that if you are heading east on a straight line from Seattle, you'll reach Brussels. Examine the following two figures and answer the following questions: what does the scale of the map mean? Which map projection does (A) use? What is the advantage of this projection? If you want to travel between these two cities, by the shortest distance, which line would you follow. State the reason.



(A)



(B)

Question 4

- 1) What heights do GPS, Leveling, Gravity and Satellite Altimetry measure?
- 2) Mark them on the following image (Figure 1).

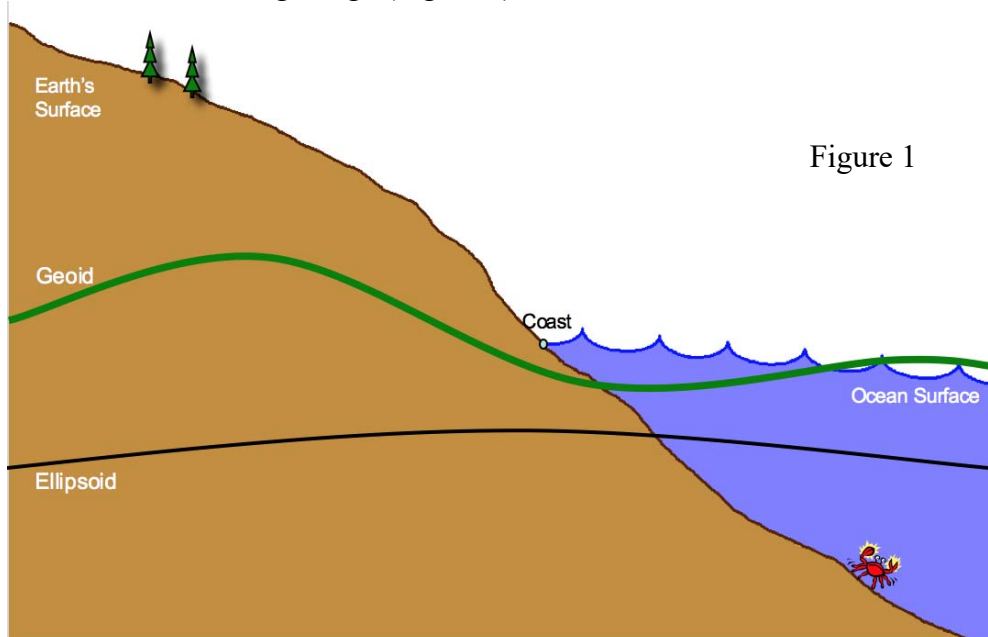


Figure 1

Question 5

What are the three segments of GPS and what are their functions? Show how they interact with each other using a diagram.