


Menofia University Faculty of Engineering, Shebin El-Kom Civil Engineering Department Second Semester Exam, 2013-2014 Date of Exam: 15 / 6 / 2014		Subject : Positioning Systems Code: CVE547 Year : Public Works Diploma course Time Allowed : Three hours Total Marks : 100 marks
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Try all Questions (Use clear sketches)

[Marks]

Question (1)

[20]

- For single point positioning by GPS, a minimum of four satellites should be observed. Why?
- Define mask angle, multipath and cycle slips in GPS surveying.
- Explain GPS code and carrier phase measurements, and compare between their accuracy.

Question (2)

[20]

- Explain how GPS systematic errors can be overcome by single, double and triple differences.
- Define the meaning of the DOP-factor and its relation to satellites geometry in the sky.
- What is the difference between rapid and precise satellite ephemerides?

Question (3)

[20]

- Define the Space, Control and User segments in the GPS technique.
- In GPS projects, the VDOP factor is always greater than the HDOP factor. Why?
- Is GPS the only available satellite positioning system? Explain.

Question (4)

[20]

- Compare between the definition and accuracy of single and dual frequency receivers.
- Write approximate values for the different types of errors in GPS surveying.
- What are the reference coordinate systems in the GPS technique?

Question (5)

[20]

The GPS geodetic heights of stations A & B are 63.563 m and 81.301 m; and their elevations are 51.102 m and 69.317 m, respectively. Stations A and B have model geoid undulations of 12.822 m and 12.756 m. Compute the elevation of station C that has a geodetic height of 85.458 m and a model geoid undulation of 12.668 m.

With best wishes

This exam measures the following ILOs															
Question Number	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
skills	dk-1-1	dk-1-2	dk-1-1	dk-1-2	dk-1-2	di-2-1	di-2-1	di-2-1	di-2-1	di-2-1	dp-1-1	dp-1-1	dp-1-1	dp-1-1	dp-1-1
	Knowledge & Understanding Skills					Intellectual Skills					Professional Skills				