GEOG205, Winter 2021, 2nd exam = 10%

Name:

A. MULTIPLE CHOICE - questions are worth 0.5% each; bold or highlight the correct answer

1. Who developed the very earliest map projections in cartographic history ?

a. Gerhard Mercator
b. The Vikings
c. The Romans
d. The Greeks
e. Oswald Winkel

2. The wavelengths used in remote sensing that highlight healthy vegetation are:

a. Visible
b. Near Infra-red
c. Ultraviolet
d. Thermal Infra-red
e. Microwave

3. The device that enabled the accurate determination of longitude in the 18th century was the:

a. Telescope
b. Compass
c. Chronometer
d. Lithograph
e. Global Positioning Systems

4. The minimum number of satellites required to give a (3D) position location from GPS is:

a. 2 b. 24 c. 6 d. 8 e. 4

5. The word orientation and to 'orient' oneself originate from which era / events:

a. The Garden of Eden, after Adam ate the apple and knew which way to go
b. Roman and Dark Ages maps showing the East (Orient) at the top (0-500AD)
c. The Chinese discovery of North America in 1418
d. Mercator's projection with North to the top, 1569
e. The first maps used for the sport of orienteering, 1886

6. Where in the electro-magnetic spectrum, are energy wavelengths unaffected by clouds:

a. Microwave
b. Near infra-red
c. Thermal infra-red
d. Visible
e. Ultra-violet

7. In GPS terminology, what causes a high value of PDOP (percent Dilution of Precision) ?

a. High cloud cover
b. Satellites too spread out in the sky
c. Heavy precipitation
d. satellites not well spread out in the sky
e. Too many satellites visible, causing mixed signals

8. Full colour map production using multiple map layers was only possible after:
a. Printing press 1450
b. Offest lithography 1875
c. Aerial photography 1945
d. Digital Mapping 1975
e. Online map viewers 2005

9. What is the name of the only fully Canadian remote sensing satellite and sensor system used for earth observation ?

a. Radarsat b. Examsat c. Landsat d. Cartosat e. Canucksat

10. The winkel tripel is a:

a. Complex ice skating move, attempted only by those skilled in geomatics
b. Swiss technique in hill-shading for three sided peaks e.g. the Matterhorn
c. Three-sided map symbol used to depict small marine animals
d. Cartographic solution where three map symbols overlap
e. Type of pseudo-cylindrical map projection

B. SHORT ANSWERS - questions are worth 1% each: Insert your answers after each question

1. This course is 'Cartography and Geomatics'; briefly explain the difference between these two terms.

Cartography is the 'art and science of making maps' or final mapping output. Geomatics is an umbrella term for all the mapping technologies including data gathering, analysis and output.

2. In mountain cartography, most maps include both contour lines AND shaded relief. Briefly explain why they would incorporate both these types of relief representation.

Contour lines display precise elevations (and from that slope), while shading presents a visual display of aspect and enables easier landscape visualization, as well as presenting details between contours.

3. In the early days of digital mapping, it was believed that one big advantage over manual cartography would be the ability to quickly and frequently update topographic maps. To what degree has this actually happened in Canada – explain why or why not.

As the country is so large, it often does not happen in many provinces, especially away from the cities, although it can happen in municipalities

4. Why is it redundant to say 'something is so big, you can see it from space" ?

Current sensors have pixel resolution down to 25cm, so just about anything is visible at this scale.

5. In online map viewers, explain why Greenland appears larger than Africa and South America, when in reality it is much smaller than both?

Online viewers use the (conformal) web mercator projection, which involves areal expansion as you move away from the Equator (equal in both directions); this is substantial in polar areas (such as Greenland).