

GEOG 101 STUDY GUIDE

EXAM 01 – INTRODUCTION TO GEOGRAPHY

Readings due:

Physical Geography, Mason et al., units 1-5

Questions for review:

1. What is physical geography? What does spatial mean and how does it apply to physical geography?
2. Define science. Trace the steps of the scientific method and explain the peer review process.
3. Define geodesy.
4. Who was the first known person in history to think that the Earth was round?
5. Explain how Eratosthenes calculated the circumference of the Earth.
6. What logic did Newton use to come up with the concept of the Earth as an oblate spheroid?
7. Define geoid.
8. Why do we use longitude and latitude?
9. How many degrees of longitude does the Earth have? How many minutes are in each degree? What is the origin line and why does it start where it does?
10. How many degrees of latitude does the Earth have? How many minutes are in each degree? What is the origin line and why does it start where it does?
11. What is a meridian? What is a parallel?
12. What is a great circle?
13. What is special about Polaris and the Southern Cross?
14. If I am lost, but I see Polaris at 55° above the horizon, what is my latitude? *Don't forget to include the direction!*
15. If I am lost, but I see the Southern Cross at 26.5° above the horizon, what is my latitude?
16. I am lost, but at solar noon (when the sun is at its highest point in the sky) my watch set to Greenwich time reads 7:30pm, what are my longitude coordinates? *Don't forget to include the direction!*
17. If I saw the Southern Cross at 73° above the horizon last night and today at solar noon my watch set to Greenwich time reads 5:00pm, what are my latitude and longitude coordinates?
18. If I saw Polaris at 34° above the horizon last night and today at solar noon my watch set to Greenwich time reads 10:30am, what are my latitude and longitude coordinates?
19. Who developed the Public Land Survey System (PLSS) and why?
20. Be sure to work through the PLSS exercise available on the class website.
21. What is map scale and what are the three ways to express it?
22. What is a map projection and why do we need to use them? Which map projection is the best? Explain the concept of distortion.
23. What is the point or line of tangency (also called a standard line)? Why do we care about it?

24. Explain the concepts of conformity and equivalence in map projections.
25. What projection properties does the Mercator projection keep? What are the advantages and disadvantages of this map projection? Give an example of what you could use it for.
26. What projection properties does the Sinusoidal projection keep? What are the advantages and disadvantages of this map projection? Give an example of what you could use it for.
27. What projection properties does the Winkel Tripel projection keep? What are the advantages and disadvantages of this map projection? Give an example of what you could use it for.
28. What two things are emitted by the sun? To what does “insolation” refer?
29. What is the magnetosphere and what does it do?
30. How long does it take the Earth to revolve around the Sun? How long does it take the Earth to rotate on its axis?
31. What is the angle of the current tilt of the Earth?
32. Define aphelion and perihelion.
33. Define subsolar point.
34. What is important about 23.5°N , 23.5°S , 66.5°N , and 66.5°S ?
35. Fully explain what is happening on Earth during the December (winter) solstice, March (vernal) equinox, June (summer) solstice, and September (fall) equinox.
36. What does the Analemma do?
37. Explain how the Sun’s altitude in the sky affects temperature on the Earth.
38. Define albedo and explain how it works.

Don’t forget your Scantron form and #2 pencil!