

GEOG 442 -- FINAL STUDY GUIDE -- S/13 -- Dr. C.M. Rodrigue

The final consists of 50 raw points (worth 25% of your overall grade). There are 20 true-false, 10 multiple choice, and 10 matching questions (Scantron 882 and soft pencil) and your choice of 3 out of 9 short answer questions (a few sentences/short paragraph). Each short answer is worth up to 4 points for a total of 10 points among them (a 4 is kind of extra credit, so I've put a bit of a cap on that).

Please review the following, referring to lectures, readings, text glossary, and online searches:

- SLOSS
- islands impoverished at family level but rich at species and genus level
- why are high level predators rare on islands?
- keystone species
- drier climates' predictability from one year to the next
- feral pigeon morphs and natural selection and sexual selection
- the "rivet hypothesis" and the "redundant species" hypothesis with regard to species number and ecosystem function
- examples of deliberate and accidental introductions of invasive exotic species
- degrees of family-level endemism in the northern continents versus the southern continents
- *alpha*, *beta*, and *gamma* diversity measures and how they're calculated
- what are biomes? (check both notes and textbook)
- which two general biome types are dominated by the tree life form?
- pyrogenic vegetation
- where Mediterranean scrub (e.g., chaparral or maquis) can be found
- Mediterranean scrub's relationship with recurrent fire
- Mediterranean environments as a percentage of Earth's land area *versus* the percentage of flowering plant species they contain
- why do affluent Americans live in chaparral-covered hillsides when the Mexicans, Spanish, and Indians in California before them avoided those hillsides?
- conditions that create the lower, more open garrigue in maquis-dominated regions
- conditions that favor the lower, more open California (coastal) sage scrub
- what is heath and where can it be found (in which climate zone)?
- the "summergreen" forest of semi-tropical humid, continental humid, and west coast marine climates -- appearance, seasonal behavior, biodiversity compared with tropical rainforests
- where does subtropical conifer forest dominate and where does summergreen forest dominate (both can be found in the subtropical humid climate but differ in soil preferences)?
- tropical rainforest biodiversity and structural complexity reflects which factors?
- difference between temperate steppe (short-grass prairie) and tall-grass prairie in appearance and general locations/climates
- differences among tropical desert, tropical steppe (sudan), and savanna in appearance and general locations/climates
- which climates are the most even in temperature and moisture?
- why might temperate desert be a more challenging environment for plants and animals than tropical desert?
- how do you interpret a prob-value reading in a Chi-square test? how do you compare it with *alpha* (or your hypothesis-testing criterion)?
- how statistical logic works (null and alternative/working hypotheses)
- transect sampling *versus* quadrat sampling methods
- Wallacea
- Raunkiaer's functional life-form classification main categories of plants

- the Great American Interchange -- which mammal families went north, which went south, which went extinct, and what was the corridor (isthmus) between North and South America like as the two continents connected? when did the connection happen?
- the Theory of Island Biogeography -- predictions about the relationship between island size or spatial isolation and the equilibrium number of species on an island
- how has the Theory of Island Biogeography been criticized?
- Rakata after the Krakatau eruption of 1883 -- how does its acquisition of new species compare with the expectations of Island Biogeography?
- differences and similarities between the global distribution of angiosperm plant families and mammal animal families -- which shows more sharing of families across the southern continents and which less? why the differences?
- human parasites and when and why did they become common?(roundworms, hookworms, dysentery) -- eeeuw!
- animal domestications -- which is the oldest and how far back might that relationship go? which were the two next oldest domesticates and where/when did they enter human control?
- while humans have domesticated most of their animal prey, our species still hunts one major group of wild animals as a significant source of food: which group and what impact do we have on many of their species?
- the basic names, "personalities," and timing of the six great extinction events on Earth
- causal factors put forward for each of the great extinctions (some are really not understood too well, but others have some prime suspects)
- thermohaline circulation and connections with climate today and climate change in the past
- what sorts of factors have been put forward to explain why California sage scrub maintains a stagnant boundary with exotic-dominated grassland in some places for decades and, in other locations, is actually expanding back into grassland?