

Please restrict your response to the space available; do not extend your answers to the back of the paper. Answer directly and fully - don't beat around the bush. The point values for each question are given in parentheses. Any notes you added to printouts of Wanda Weatherly's notebook are allowed in answering the exam. All page references refer to Wanda's notebook.

1 (16). "Location 4" on page 302 is the climate diagram for Baghdad, Iraq. Please answer the following with "True" or "False" with regard to that climate diagram.

- _____ According to the climate diagram, Baghdad is a summer-wet environment.
- _____ According to the climate diagram, there are periods of the year when precipitation exceeds potential evapotranspiration.
- _____ According to the climate diagram, Baghdad freezes in the winter.
- _____ According to the climate diagram, we would expect Baghdad to be a grassland.

2 (8). Should the vegetation in "location 1" be similar to the vegetation in Baghdad, Iraq? [Yes or No] Why or why not?

3 (8). What is the expected vegetation type in "location 2"? On what ecological basis do you make that decision?

4 (8). Do you expect to find naturally occurring C4 grasses in Baghdad, Iraq? [Yes or No]. Provide the correct explanation for your answer.

5 (12). Please correctly align the climate diagrams on page 304 with the appropriate vegetation and field station description on page 303. For vegetation types, simply refer to them in order (i.e., 1, 2, 3). There will be at least one climate diagram for which there is no field station; in this case enter “no field station”

| Field station (1, 2, 3, or no station) | Climate diagram on page 304 |
|--|-----------------------------|
| | Location 5 |
| | Location 6 |
| | Location 7 |
| | Location 8 |

6 (10). My cousin Vinnie argued that location 6 was clearly a Mediterranean-climate region because that location received winter rains. Therefore, he predicted that location 6 was the home of the Aztecs in the Mountain West Conference. Is Vinnie correct? [Yes or No] Provide the correct justification for your answer.

7 (4). If I was to visit the campus for location 11 (outside of the Mountain West Conference), what dominant vegetation type would I expect to see in the natural areas of this region?

8 (4). My cousin Vinnie also argued that location 9 was clearly a region dominated by boreal forests. Is he correct? [Yes or No]

9 (6) Do you expect the net primary productivity of the vegetation to be greater in location 6 or 11? Provide the correct justification for your answer.

10 (10). Related to the statements on page 306, how is anticipated future climate change going to impact the lower and upper distributions of coniferous trees along the Wasatch Front?

11 (10). The governor's aide thinks that the distribution of riparian trees along the Wasatch Front will not change in the next century, assuming that water availability in our canyon streams remains constant. Is she correct? [Yes or No] Provide a correct justification for your answer.

12 (8) Contrast air temperature patterns during the growing season in alpine versus arctic tundra.

Bonus (6) The governor noticed while camping with his family that there were clear differences in the distribution of conifer tree species along the Wasatch Front when compared to the Uinta Mountains. For example, ponderosa pine and lodgepole pine are common in the Uintas, but uncommon along the Wasatch Front. I suggested that winter snowpack depth and soil nutrient differences between the Wasatch and Uintas played a big role in limiting tree distribution such as with ponderosa pine and lodgepole pine. Am I correct or not? Provide the correct justification for your answer.