Restrict your responses **only** to the space available. Answer directly and fully - don't beat around the bush. Point values for each question are given in parentheses. Of course, any notes you added to Wanda's notebook printouts are allowed in answering the exam. All page references refer to Wanda's notebook.

1 (12). Of the locations described on page 158, what biome would you expect to occur at **location 7230160**? Provide a justification for your answer based on the climate diagram on page 159.

2 (12). Of the locations described on page 158, what biome would you expect to occur at **location 7245000**? Provide a justification for your answer based on the climate diagram on page 159.

3 (12). There are vegetation patterns as one drives up the Wasatch Mountains. For example, as one drives up Big Cottonwood Canyon, a tree species first appears on the north-facing slope and later at higher elevations they appear on the south-facing slope. We see these patterns in the data on page 156. Please provide a brief explanation of why these patterns are expected. Be sure to comment on both elevation and slope observations.

4 (10). Based on the tree distribution data for the western Wasatch Mountain slopes (page 156), how would you go about predicting the lower tree limits for trees on the eastern Wasatch Mountain slopes?

Name _____

5 (12). The relationships between precipitation and elevation for the east and west sides of the central Wasatch Mountains are provided on page 157. Briefly provide a succinct but complete **quantitative** description of the relationships between precipitation and elevation on the east (e.g., Park City) and west (e.g., Alta) sides of the Wasatch Mountains. Be sure to comment on the slopes of the precipitation-elevation relationships and why these patterns expected.

6 (10). Provide a clear, complete and justified explanation for why total daily transpiration amounts in the experimental treatment *Lactuca* are greater than on the control plants (natural orientation) (page 162).

7 (10). Provide a succinct interpretation of the data results plotted on page 163.

8 (10) How do the early and late season leaf arrangements for *Lactuca* on page 160 relate to seasonal microclimate patterns?

9 (12) Please match the observed plant life-form distributions on page 164 with specific biomes as described on page 158.

	Biome
Location 1	_____
Location 2	_____
Location 3	_____

10 (10) Locations 1 and 2 on page 164 have significantly different abundances of phanerophytes and therophytes. Would they be expected to have similar differences in the abundances of annuals and trees?

Yes or no.

Provide a brief explanation to support your claim.

11 (5) What is the common name for *Abies concolor*?