

UNIVERSITY OF OREGON • PE & REC • OUTDOOR PURSUITS PROGRAM  
PEOL 453: Environmental Education - Final Examination Study Guide - Spring Term 2008

Content for the final examination will be selected from the following questions. The questions may be asked in full or in part, or in a slightly different fashion. Make sure that you understand the questions so that your study time is productive.

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Why are Oregon winters wet and the summers relatively dry and sunny? Respond by addressing the influence of the jet stream and high and low pressure cells on weather systems.

The plants we identified on our weekend field trip to the coast typically grow within five distinct vegetation zones or layers. For each of the vegetation zones specified on the left below, list common plants for each specific area (the number of plants per zone is specified below).

<u>Vegetation Zone</u>	<u>Giant Spruce Trail (OR coast)</u>
Canopy trees (2 trees per area)	.....
	.....
Understory trees (1 tree per area - no duplicate responses)	.....
Shrubs (two shrubs per area - no duplicate responses)	.....
	.....
Herbaceous plants - including ferns, flowers, non-woody plants (four per area - no duplicate responses)	.....
	.....
	.....
Ground cover - includes mosses, lichens, etc. For the purposes of this question, list 2 different kinds of ferns	.....
	.....

Name 3 ways to distinguish spruces from true firs?

Why do conifers prosper in the Pacific Northwest (in other words, what advantages / characteristics / attributes do conifers have that allow them to flourish)?

Describe two ways to tell monocots apart from dicots in the field.

What are lichens? Provide a specific definition. List AND provide one example of each of the four (4) general kinds of lichen growth forms.

Fungi participate in several types of nutritional relationships with other organisms. Four of these relationships are identified and discussed in the article "Fungi Nutritional Modes" on the Environmental Education web page. Describe/define each type of relationship common to fungi, and provide an example of each.

What is nitrogen fixation? Why is nitrogen fixation necessary? Name two plants that grow in the Pacific Northwest that fix nitrogen.

A friend asks you to explain the differences in appearance between poison oak and Oregon white oak. Write your response and be sure to include information on general appearance, leaf *composition* and *arrangement* and preferred environmental conditions.

What is a microclimate? Discuss the role of terrain, sun, vegetation and moisture in producing forest microclimates.

*Abies grandis* is in the \_\_\_\_\_ family. (You will be asked a selected assortment of similarly worded questions). Know the families of each of the species taught in the small group lessons.

I am the only tree found in the PNWest that is in the Ericaceae family. I am the \_\_\_\_\_. I am a large shade tree that sports a fancy double samara I am the \_\_\_\_\_. You WILL be asked an assortment of these questions on information presented by your peers.

Define the following terms. You may have to consult readings in the course packet or text, the web site, or other sources.

rhizome	indicator species	keystone species	layering
riparian zone	parasite	epiphyte	fire interval
seral	saprophyte	serotinous	buttressed
symbiosis	succession	dioecious	dog hair stand

What is the bog (where the pitcher plant grows) deficient in? Why is it deficient in this specific nutrient? You may be asked to describe how the following factors that lead to a deficiency in this critical plant nutrient inter-relate (slow water flow, poor aeration, accumulation of plant material, lack of bacteria, increase in acidity, poor absorption by plant roots).

During succession, the physical conditions of the forest change over time (generally speaking, the physical environment becomes less extreme). Other changes also occur. Name 4.

What are four components of an "old growth" forest.

Describe 4 benefits of snags to forest health.

Describe 4 benefits of downed trees to forest health.

Describe 2 ways litterfall contributes valuable nutrients to the forest floor.

Describe 2 benefits of mycorrhizae to forest plants.

Describe the benefits the Kalapuyas gained from their annual burning of the Willamette Valley. Be sure to include the role of ecotones in your response.

Identify and discuss (4) reasons why low intensity fire maintains forest health.

What do the letters in these acronyms refer to: LAWS, DAM and MADogHorse? Describe what the acronyms mean.

Within this course the acronym SPICE was introduced as a means of enhancing/contributing to observation skills while learning about a specific environment. What statement/concept is associated with each letter of this acronym? Provide an example for each letter. Use any example/topic relevant to the course content (including your observations/learning outcomes from the areas we visited on our outings) as your resource base when providing examples. DO NOT include natural history topics excluded from the content of this course. An example may be used once and must be very applicable to the concept addressed.

Describe IN DETAIL (and in plate tectonic terms) how the high Cascades of Oregon are forming.

Some flower families have unique characteristics that make flower ID easier. For example, members of the Lamiaceae family have square stems and opposite leaves. What unique characteristics do the following flower families have? Fabaceae, Brassicaceae, Liliaceae, Ericaceae, Apiaceae and Asteraceae.

Identify 5 ways that riparian environments are ecologically significant. Consult the article 'Riparian Zone Ecology' on the course website for information.

During the test you might be asked to refer to the color document (trees.pdf) depicting sets of images of trees (or parts of trees) taught by your peers. Each image set is marked with a letter. On the exam you may be asked to write the name of the tree next to the letter.

Match the species scientific name with its common name (by writing the letter in front of the common name on the appropriate line after the scientific name). For example:

Tsuga heterophylla	<u>  b  </u>	a) Grand fir
Vaccinium parvifolium	<u>      </u>	b) Western hemlock
Picea sitchensis	<u>      </u>	c) California hazel
Fraxinus latifolia	<u>      </u>	d) Oregon white oak
Arbutus menziesii	<u>      </u>	e) Black cottonwood
Abies grandis	<u>      </u>	f) Bigleaf maple
Corylus cornuta	<u>      </u>	g) Red huckleberry
Quercus garryana	<u>      </u>	h) Oregon ash
Pinus contorta	<u>      </u>	i) Pitcher plant
Populus trichocarpa	<u>      </u>	j) Pacific madrone
Pseudotsuga menziesii	<u>      </u>	k) Western redcedar
Darlingtonia californica	<u>      </u>	l) Red elderberry
Thuja plicata	<u>      </u>	m) Sitka spruce
Sambucus racemosa	<u>      </u>	n) Incense-cedar
Calocedrus decurrens	<u>      </u>	o) Shore pine
Acer macrophyllum	<u>      </u>	p) Douglas fir