

PLB 440 Grassland Ecology. Fall 1999. Test 1

Name: _____

Answer all questions:

- 1) Label the following parts on the diagram showing the inflorescence of *Ehrharta erecta* (encircle structures as necessary).
 - a. Lower glume.
 - b. Lemma.
 - c. Spikelet.
 - d. Leaf.
 - e. Location of ligule

- 2) Make a clear, labeled drawing to show the following features:
 - a. Basal sheath.
 - b. Flattened blade.
 - c. Ligule.
 - d. Auricle.

- 3) Name one of the grass subfamilies. Give an example of a species in the subfamily that you name.
 - a. Subfamily _____
 - b. Species _____

- 4) Describe a morphological feature that allows us to distinguish the Poaceae from either the Cyperaceae or the Juncaceae.

- 5) Match up the grasslands on the left with the dominant species on the right:

a. Tropical & Subtropical bunch grass savannahs.		i) <i>Agropyron spicatum</i>
b. Temperate and Alpine meadows.		ii) <i>Calamovilfa longifolia</i>
c. Steppe grasslands		iii) <i>Festuca rubra</i>
d. Illinois loess hill prairies		iv) <i>Festuca sulcata</i>
e. Illinois sand prairies		v) <i>Nardus stricta</i>
f. Palouse prairie		vi) <i>Themeda triandra</i>
		vii) <i>Schizocyrium scoparium</i>
		Viii) <i>Stipa spartea</i>
		ix) <i>Uniola paniculata</i>

PLB 440 Grassland Ecology. Test 1.

Your answers should be no more than two pages of double-spaced type each, plus appropriate illustrations, tables, and references. This is a take-home exam. Do not plagiarize the work of others, and work alone. I expect to see reference made to the primary literature.

Answer **THREE** of the following:

- 1) What did Lindley (1846: in Clifford 1987) mean when he said of the grasses “*Their so-called flowers consist of green scales, not placed in whorls, but arranged one above the other, and are undoubtedly constructed of bracts alone.*”
- 2) Under what conditions did the Poaceae become differentiated from other families? Why did Stebbins (1987) write, “*The family occupies an isolated position in the Liliopsida (Monocotyledons).*”
- 3) Compare and contrast the vegetation and general ecology of two named grassland associations in North America. Choose from one of the following: True Prairie, Coastal Prairie, Mixed Prairie, Fescue Prairie, Palouse Prairie, Pacific Prairie, or Desert Plains Grassland.
- 4) Discuss the vegetation/environmental relationships of the Serengeti grassland in Africa. How does it contrast with the N. American True Prairie?
- 5) Why did Holechek *et al* (1998) feel compelled to write “*...the climax approach does provide a basis for range condition classification which is difficult to obtain with other approaches.*” What are they talking about? What is the issue? Do you agree?