Team Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Page 1 of 4

2013 California Envirothon

Range Station Test

Total = 100 points

Please write your team name on the top of EACH page. You may unstaple the test to work on the

questions in any order, but pages should be in the correct order when the test is turned in. You may

choose to split your team and work on several questions at once or work on them together.

1. What monitoring method is used on California’s annual grasslands to determine if proper forage use was obtained? **(2 points)**
2. Height-Weight Curves
3. Residual Dry Matter
4. Line Point Intercept
5. California Rangelands are broken up into Major Land Resource Areas (MLRA’s) based on climatic region; those are broken up into smaller units based on soils, landform, aspect, elevation, climate, hydrologic characteristics and plant community. Those are called: **(2 points)**
6. Ecological Sites
7. Watersheds
8. Basin Plans
9. Grazing animals have a unique ability to convert rangeland roughage (in the form of grass, browse, and forbs) to protein which helps feed the nation and world. This rangeland forage would otherwise remain unused as an agricultural product. This unique ability is due to: **(2 points)**
10. Their ruminant digestive system
11. Their grazing patterns that allow them to seek and find high quality forage
12. Their ability to utilize the entire grazing unit
13. (a) and (b)
14. (a), (b) and (c)
15. Animal Unit is described as: **(2 points)**
16. One cow with calf
17. One mature cow
18. Three sheep
19. California’s rangelands are primarily made up of: **(2 points)**
20. Native perennial grasses
21. Chaparral
22. Annual Grasslands

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1. List four practices, management or structural, that can positively impact grazing distribution **(8 points – 2 points per practice)**.
2. What are the long term detrimental effects of a rangeland weed invasion such as medusahead or yellow starthistle? **(2 points)**
	1. Increased species diversity and increased carry capacity
	2. Increased species diversity and decreased carrying capacity
	3. Decreased species diversity and decreased carrying capacity
	4. Decreased species diversity and increased carry capacity
3. List four primary factors that are responsible for controlling species composition and forage production **(8 points – 2 points per primary factor)**.
4. Seasonal grazing has been studied by several researchers on California’s annual rangelands. In each case, seasonal grazing offered significant forage and livestock production advantage over continuous grazing. **(2 points)** True or False
5. Changes in forage production and composition of annual vegetation are controlled primarily by annual weather patterns. **(2 points)** True or False
6. Stocking rate, through its influence on residual dry matter (RDM), can influence production and composition. **(2 points)** True or False
7. Close grazing, resulting in low RDM, can delay fall growth and reduce winter growth of annual rangeland forage plants. **(2 points)** True or False

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1. In California, heavy grazing has been used to control weeds such as medusahead and starthistle. **(2 points)** True or False
2. In annual rangelands, season or time of grazing may be used to suppress one species while increasing another. **(2 points)** True or False
3. Plant production and animal production per head increases with decreasing stocking rate (grazing intensity). **(2 points)** True or False
4. Residual dry matter in the fall provides an indicator of grazing intensity that should influence the decision to change stocking rate. **(2 points)** True or False
5. While rotational grazing does not improve productivity, it may facilitate control of season, frequency, duration or intensity of grazing that meets other ecosystem services. **(2 points)** True or False
6. Residual dry matter (RDM) is the old herbaceous plant material left standing or on the ground at the beginning of a new growing season. **(2 points)** True or False
7. Properly managed RDM can be expected to provide a high degree of protection from soil erosion and nutrient losses. **(2 points)** True or False
8. Annuals regenerate each year from their roots. **(2 points)** True or False
9. Annual plant vigor is closely related to grazing. **(2 points)** True or False
10. Winter annual plants germinate each fall, grow slowly during the winter, and have a rapid spring growth period followed by a dry forage period during the summer. **(2 points)** True or False
11. The intent of California’s Certified Rangeland Manager Program is to provide evidence of professional competency, protect the public interest and ensure proper management of the state’s rangeland resources. **(2 points)** True or False

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Correctly identify the following 8 herbaceous plants using either the common name or the scientific name **(2 points each).** If using the scientific name and you can only identify to genus, then **1 point** will be awarded.

1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
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Is the following plant a legume or a forb and is it a perennial or annual? (**1 point each**)

Identify the ligule and the node (**2 points each**)

Clip a plot following the procedure recommended by the University of California. **(20 points)**