HCS612 - Mid-term exam

Name…….

29 October 2002
Complete 10 of the following questions (clearly show which 2 questions you do not answer)
Each question is worth 10 points.
Closed book exam, 1 page of notes is allowed
Time allowed 1.5 hrs

1) Grasslands can be used for conservation (prairie), production from grazing, hay production or for turf
   In what respect are these various uses similar (give 5 examples)

   a)

   b)

   c)

   d)

   e)

   In what respect are these various uses different (give 5 examples)

   f)

   g)

   h)

   i)

   j)

2) Rotational grazing has distinct effects on forage resulting from the pattern of herbage removal and regrowth. Rotational grazing also has other benefits outside of the immediate effects on forage. Give 5 such effects, and a sentence as to why its is beneficial

   a)

   b)

   c)

   d)

   e)

3) Measurement of animal intake is important in grassland management. What are 2 reasons why such information is important

a)

b)

Describe 4 methods for measuring animal intake from pasture (1-2 sentences each)

c)

d)

e)

f)

4) There are many computer models used in grassland management. Describe 2 benefits that modeling has (and why)

a)

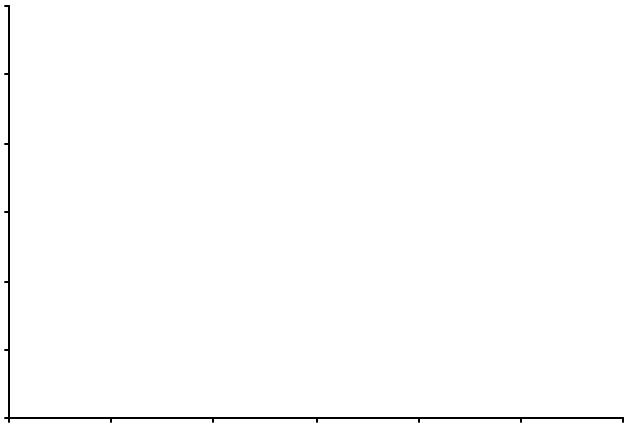
b)

give 2 limitations to the use of models in grassland management (and why)

c)

d)

5) Grasslands do not grow uniformly throughout the year. Draw a typical pasture growth pattern for Ohio (label axes appropriately)



The greatest growth rate occurs in spring. Give 4 reasons contributing to this peak in forage growth

a)

b)

c)

d)

6) Forage has many effects on animal intake. Give 5 ways in which forage affects animal intake, and briefly (1 sentence) explain the nature of this effect.

a)

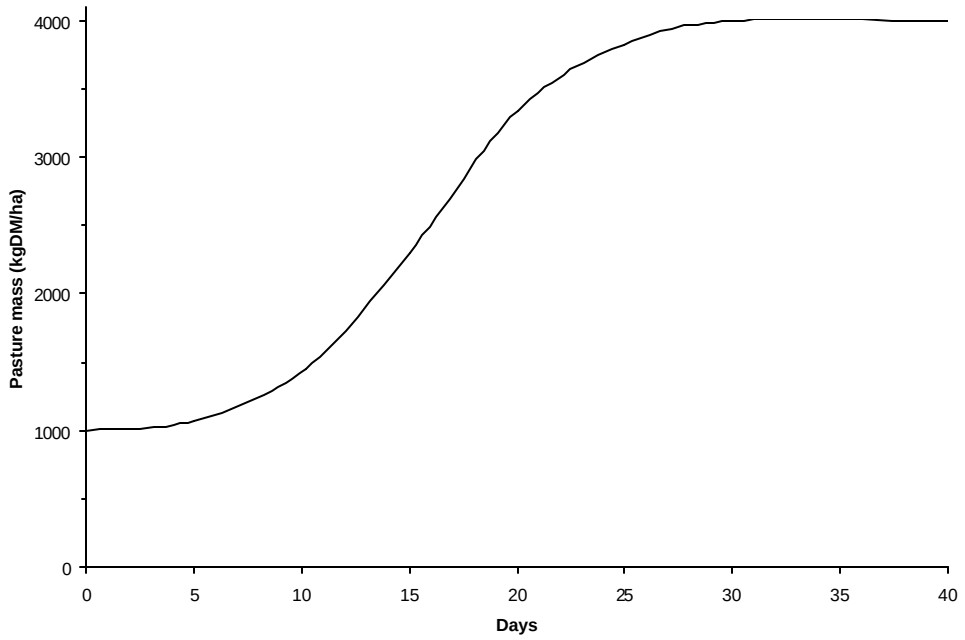
b)

c)

d)

e)

7) A typical pasture regrowth curve is given below:



a) Label (A) the point on the curve having highest growth rate (theoretically, continuous grazing to maintain this mass would maximize yield)

b) Label (B) the point on the curve that might be typical for the pre-grazing mass for an infrequent-lax grazing regime

(mass = ……., days = ……..)

c) Label (C) the point on the curve that might be typical for the post-grazing mass for an infrequent-lax grazing regime

(mass = ……., days = ……..)

d) Calculate the average growth rate for b-c as (change in mass/regrowth period)

e) Label (D) the point on the curve that might be typical for the pre-grazing mass for an frequent-intense grazing regime

(mass = ……., days = ……..)

f) Label (E) the point on the curve that might be typical for the post-grazing mass for an frequent-intense grazing regime

(mass = ……., days = ……..)

g) Calculate the average growth rate for e-f as (change in mass/regrowthperiod)

8) a) what is endophyte?

b) Give 2 reasons why livestock on endophyte infected grassland have lower production?

c) What are 2 species of plant, which do not contain endophyte?

d) What are novel endophytes?

e) What are 2 management recommendations you would give a farmer who wanted to reduce the amount of endophyte on his farm?

i)

ii)

8) Describe 5 methods used to measure pasture mass or pasture growth rate. Briefly describe an advantage and disadvantage of each method

a)

b)

c)

d)

e)

10) a) Rotational and continuous grazing are two distinct forms of livestock management.

i) define rotational grazing

ii) define continuous grazing

b) Consider the statement “rotational grazing and continuous grazing are not radically different management options, but merely extremes of a continuum of grazing management options”

iii) In what way is this statement correct?

iv) In what way might this statement be incorrect?

c) Give 2 advantages for rotational grazing

v)

vi)

d) Give 2 advantages for continuous grazing

vii)

viii)

11) The balance between grasses and legumes is one of the fundamental relationships in grasslands.

a) Give 3 commonly used grass-legume mixtures throughout the world?

b) Give 4 factors contributing to the complexity of the grass-legume balance – and briefly (1 sentence) to describe the nature of each of these factors

i)

ii)

iii)

iv)

12) What are 5 components of pasture quality. Give 1-2 sentences describing how each component affects animal performance

i)

ii)

iii)

iv)

v)