HCS612 - Mid-term exam

Name…….

25 October 2001

Complete 10 of the following questions (clearly show which 2 questions you do not answer)
Each question is worth 10 points.

1) Grasslands have advantages and disadvantages compared to row cropping.
   Give 5 advantages

   a)

   b)

   c)

   d)

   e)

   and give 5 disadvantages

   f)

   g)

   h)

   i)

   j)

2) Grazing offers advantages and disadvantages compared to hay/silage grassland management.
   Give 5 advantages

   a)

   b)

   c)

   d)

   e)

   and give 5 disadvantages

   f)

   g)

   h)

   i)

   j)

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) Rotational grazing offers advantages and disadvantages compared to continuous grazing. Give 5 advantages

a)

b)

c)

d)

e)

and give 5 disadvantages

f)

g)

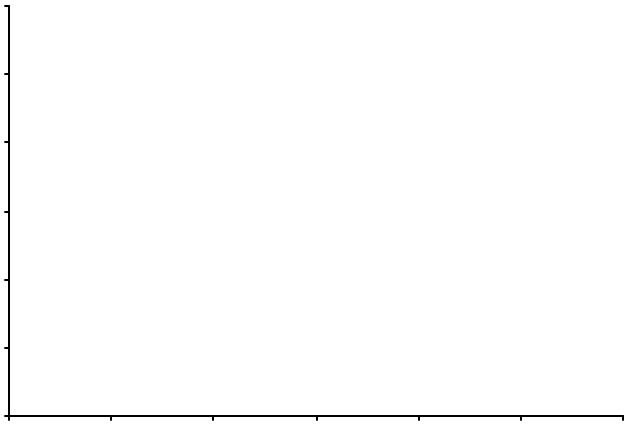
h)

i)

j)

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

a)



b) Briefly describe 2 significant factors occurring in spring and their implications for grassland management

c) Briefly describe 2 significant factors occurring in summer and their implications for grassland management

d) Briefly describe 2 significant factors occurring in autumn and their implications for grassland management

e) Briefly describe 2 significant factors occurring in winter and their implications for grassland management

6) Defoliation frequency and intensity are 2 key components of grassland management.

a) Define grazing frequency

b) How is grazing frequency measured/quantified?

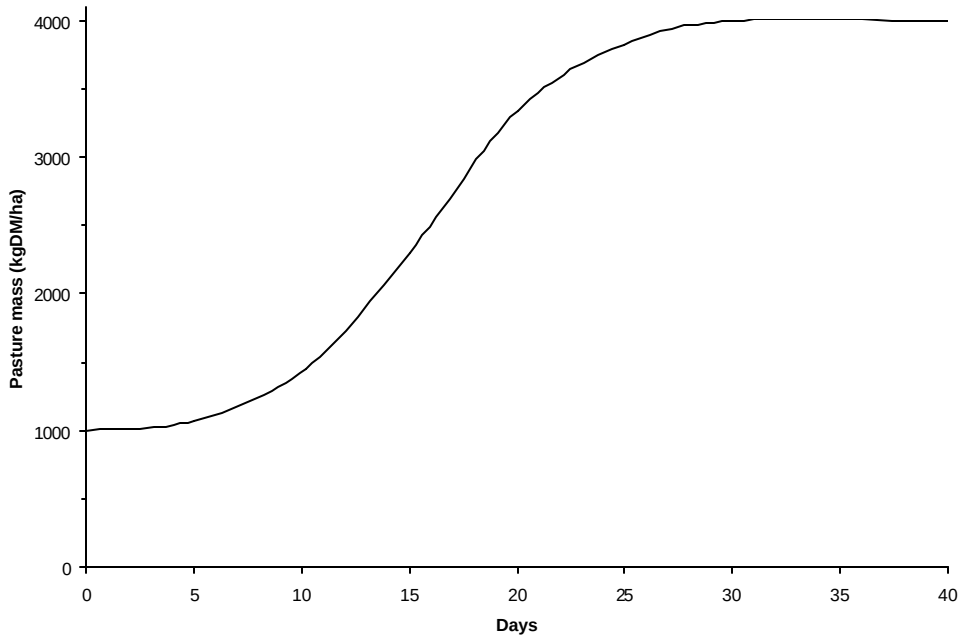
c) What are some typical values for grazing frequency

d) Define grazing intensity

e) How is grazing intensity measured/quantified?

f) What are some typical values for grazing intensity?

7) A typical pasture regrowth curve is given below:



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

b) Label (X-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 (X-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 (X-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 (X-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/regrowth period)

8) a) What is endophyte?

b) Which 2 plant species are most commonly infected with endophyte?

c) What are 2 effects of endophyte common seen in plants?

d) What are 2 common effects of endophyte on animals?

e) What are 2 common mechanisms by which fields become contaminated with endophyte?

i)

ii)

9) Pasture mass is the product of 2 key components of tillering. Complete the following equation:

a) Pasture mass = tiller …….. X tiller ……..

b) These components are typically negatively correlated in a relationship known as the –3/2 rule. In 2-3 sentences describe the –3/2 rule.

c) How does knowledge of tiller growth help with understanding the basis of grassland management?

d) For a legume with which you are familiar – describe the pattern of growth from meristems and how these are affected by defoliation.

10) Rotational grazing is popular on many grazing farms, however experimental comparisons between rotational grazing and continuous grazing does not always show any production advantage.

a) Give 2 reasons why a farmer might use rotational grazing.

i)

ii)

b) Give 2 reasons why a farmer might use continuous grazing.

iii)

iv)

c) Describe 2 reasons why production advantages occur for rotational grazing

v)

vi)

11) a) Why is stocking rate the most important parameter in grazing management?

b) How is stocking rate determined?

c) What are the implications of changing stocking rate (on pasture production, animal production, and farm profit)?

12) a) What are 4 benefits of high biodiversity pastures?

i)

ii)

iii)

iv)

b) What are 4 disadvantages of high biodiversity pastures?

v)

vi)

vii)

viii)

c) What are 2 management implications you can suggest to a farmer using your knowledge of biodiversity?

ix)

x)