**AVS 306: Feeds and Ration Formulation**

**multiple-choice questions**

* A maintenance ration is the feed required to adequately support an animal \_\_\_\_\_\_
* Water is\_\_\_\_
* What does “growth” mean?
* Which one of the following is not a basic nutrients\_\_\_\_\_\_\_
* For poultry fed typical diets, we do not need to supplement which type of vitamin?
* The difference between gross energy (GE) and digestible energy (DE) relate to \_\_\_
* Total Digestible Nutrients (TDN) is one system for estimating the available energy content of feeds. When we measure TDN, \_\_\_\_\_\_\_will be excluded from our determination.
* Which one of these are the most efficient in providing energy in diets?
* What is the main cause of grass tetany?
* Which of these better relate to feed intake?
* If you were a dairy farmer, which of the following supplements would you not commonly give to the animals?
* Ash content can be used to estimate what nutrient?
* Which components decrease and increase with plant maturity, respectively?
* In Fiber analysis, ADF indicates the amount of\_\_\_\_
* Lignin is a plant component that is\_\_\_\_
* What is not a function of dietary fat?
* Which losses are associated with Net energy?
* Both, carbohydrates and lipids\_\_\_\_\_
* Which component below is NOT included in TDN?
* Non-protein Nitrogen sources, such as urea, can help \_\_\_
* NDF contains\_\_\_
* Starch is made up of \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_ which have alpha 1,4 and alpha 1,6
* linkages. However, cellulose is made up of \_\_\_\_\_\_\_\_ linkages.
* At birth which body component makes up the largest proportion of total body mass?
* Which example has greater gross energy content?
* What are some chemical methods for determining proteins quality in the ration?
* Endophyte fungus toxicity may cause \_\_\_\_\_\_\_ in cattle?
* Which description for legumes is incorrect?
* Alkali treatment is to disrupt \_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_ linkages?
* Grains are generally:
* What part of the kernel contains most of starch?
* Which of the following has the fastest rate of rumen fermentation (%/h)?
* \_\_\_\_\_\_\_\_\_\_\_ is more limited in use for monogastric animals.
* Which of the following has the greatest amount of crude fiber?
* What factor(s) will decrease when alfalfa gets rained on after it has been cut?
* Haylage differs from silage in what aspect?
* The proper moisture content for bailing hay is\_\_\_\_\_\_?
* In the hay making process you want to\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Ammoniation does NOT cause an increase of .
* Which one is a “cool season” grass?
* Which one is a “warm season” grass?
* Compared to C4 plants, C3 plants are\_\_\_\_\_\_\_\_\_\_?
* Which one is among limitations of Relative Feed Value (RFV) index?
* Which stage of kernel moisture is best to harvest for making corn silage?
* Which processing method is with no “concave sieve” to determine particle size?
* Which stage is best to harvest for silage
* Legumes, as compared to grasses, contain?
* Which of the following is not a legume?
* Compared to the C3 plants, the C4 plants are …….
* Which of the following has a greater impact on digestibility of grass hay?
* In cattle, overconsumption of ………. may lead to “bleeding disease”.

**Section II**:

How would energy density of a grain like corn affect its intake? How about barley straw (4 points)

How do you correct “apparent DM digestibility” to obtain “true DM digestibility”? (4 points)

Name four macro-minerals and describe one important function for each? (4 points)

What are the “animal” related factors (i.e., not feed related) that affect feed intake (4 points).

What are major differences in comparing grasses vs. legumes (4 points)

Why is the information on energy provided on snacks not the best tool to assess energy intake of the body? (5 points)

Give two reasons why forage that becomes more mature does not ensile (become silage) very well (4 points).

What is “milk line” and how is it used to make the best quality corn silage? (4 points).

What are the factors influencing “hay making” process? What are the major losses associated with “hay making” process? (5 points)

Name three “dry processing” methods for cereal grains; explain one of them you know well including details about particle size, potential advantages and disadvantages (6 points).

Compare grasses and legumes in terms of CP, cell wall content, lignin content in response to maturity, and potential for bloat (6 points)

What are the two major barriers to grain digestion? Give an example (method) of how you can overcome each. (5 points)

**Section III**

What are advantages and disadvantages of dietary “added fat”? Then compare monogastric animals with ruminant animals when supplemental fat is included (6 points).

Define rumen degradable vs. undegradable protein? Which one is utilized more efficiently by the host animal? Explain why? (6 points)

Define the “net energy system” in details (7 points)

Describe how you determine biological value (BV) of a feed? (6 points)

Explain, in details, process of making “silage”, use corn silage as your example. Explain in detail what happens during each phase (pH, DM, etc.). How do you evaluate a silage? Explain your indices. What practical points do you consider when feeding corn silage?

Compare nutritional features of corn, wheat, and barley grains. Choose an appropriate method of processing, and explain why you chose it, for each grain when the plan is to use each in a ration for a) a high producing dairy cows operation and b) a broiler operation.