ANS 3319C Reproductive Physiology and Endocrinology Lab
Take Home Message: Equine Reproductive Mgmt. (20 pts: Spring 2014)

Name: ______________________________________

1) In lab next week we will collect semen from the stallion using an artificial vagina (AV).
   a) During collection, the AV mimics two conditions that stimulate ejaculation, which are similar to the
      effect the mare's vagina has on the penis during natural mating. What are they (1 pt)?
      ___________________________________________________ _______________________________

   b) The AV is fitted with a container that collects the semen after ejaculation. The collection
      container is also fitted with a mesh filter. What is the primary function of the filter (1 pt)?
      ___________________________________________________ _______________________________

   c) Why is a “phantom dummy” used to collect semen from a stallion instead of a “live mare” (1 pt)?
      _________________________________________________________________________________

   d) What signal should be observed for in the stallion that indicates he has probably ejaculated into
      the AV? Is this sign 100% accurate? Please explain (1 pt)
      _________________________________________________________________________________

   e) Immediately upon collection of semen, the sample is visually evaluated as part of the processing
      step. Please list three additional items that semen is evaluated for (3 pts).
      1. ______________________  2. ______________________  3. ______________________

   f) After collection of semen it can be used in an artificial insemination (AI) program. What are **four
      advantages** of an AI program in horses (2 pts)
      1. _________________________________________________________________________________
      2. _________________________________________________________________________________
      3. _________________________________________________________________________________
      4. _________________________________________________________________________________

   g) Regardless of whether the collected semen is used immediately after collection or it is “cooled” to
      be shipped, it is typically extended. Please describe **four functions of extenders** (2 pts).
      1. _________________________________________________________________________________
      2. _________________________________________________________________________________
      3. _________________________________________________________________________________
      4. _________________________________________________________________________________

Continued on the back!!!!!
2) When semen is cooled for shipping, it is placed in syringes with a piece of styrofoam between the syringes and cooling packets used to chill the semen. Is this an **active** or **passive** cooling method? Please explain your answer and why you think this method is used to chill semen (1 pt).

a) What is the target temperature (°C) semen should be once it has been chilled (1 pt)? 

b) What is the life span in hours of the chilled semen (0.5 pt)? 

c) What are three advantages of using chilled semen (1.5 pts)?

1. 
2. 
3. 

3) After the semen is extended, it is ready for use in an AI program. However, we need to determine if the mare to be AI is in estrus. This is accomplished by a process known “teasing” or presenting the mare to a stallion. Please describe four behavioral signs that indicate a mare is in “estrus” (1 pt).

a) 

b) 

c) 

d) 

4) What is the **duration of estrus (days)** in the mare (1 pt)? 

5) Because the duration of estrus is so long in horses it is difficult to determine when ovulation is going to occur. Knowing when ovulation is going to occur is important because AI needs to be timed as close to ovulation as possible. What management practice(s) are commonly used to accurately determine if a mare is close to ovulation? Please explain your answer (2 pts).

6) In the mare, where is semen deposited during AI (1 pt)? 