True/False (1 point each)

T / F 1. The EEG (brain wave) pattern of an animal that is in REM sleep closely resembles the EEG pattern of an animal that is alert.

T / F 2. The reproductive hormones LH and FSH are not found in the male.

T / F 3. A feral animal is one that was formally domesticated but was released or escaped and is now living in a semi-wild state.

T / F 4. REM sleep does not occur in cattle and horses, probably because they have to be on the alert for predators.

T / F 5. When pigs are placed into pens with pigs from other litters at weaning, they generally fight to establish dominance for 24 to 48 hours.

T / F 6. When sows on pasture combine litters, the litters generally fight to establish dominance for 24 to 48 hours.

T / F 7. Sows form specific bonds to their piglets and will only let their own pigs nurse.

T / F 8. Similar to litter bearing dogs and cats, sows clean their piglets at birth and encourage their piglets to nurse.

T / F 9. The studies on the behavior of cloned pigs that Dr. Friend told you about found no differences in the personalities of the genetically identical (cloned) pigs.

T / F 10. According to Kilgoure, sows do not form attachments to their “nest” or “home”, and often spend nights in different locations.

T / F 11. According to the latest research, the hormone oxytocin plays a critical role in initiating and maintaining love relationships.

T / F 12. Electrical stimulation in the brains of fetuses prior to their being born is not desirable because it is linked with the loss of connections between cells in the brain.

T / F 13. All people who had lobotomies preformed on them up through the 1960’s required special care and could no longer hold a simple job.

T / F 14. The sharp spurs that roosters use when fighting grow out of the front of their legs and point forward.

T / F 15. Both free ranging groups of chickens and turkeys organize themselves into similar “harem groups”.

Multiple choice (1.5 pts each)

_____ 1. The person who is credited with originally describing the “peck order” in animals was: a) Konrad Lorenz; b) Charles Darwin; c) Irenaus Eibl-Eibesfeldt; d) a college student home on vacation.

_____ 2. About what percentage of gilts that are in estrus will stand for a person who is applying pressure to her back when neither a boar, his odor, or his vocalizations are present: a) 25%; b) 50%; c) 75%; d) 80%; e) 98%.
3. About what percentage of pigs that are in estrus will stand for a person who is applying pressure to her back when neither a boar or his odor is present, but a tape of his vocalizations is played: a) 25%; b) 50%; c) 75%; d) 80%; e) 98%.

4. During estrus in cattle: a) estrogen is at a low point; b) progesterone is at a low point; c) a LH peak occurred just prior to the onset of estrus; d) ovulation occurs.

5. The spinal cord controls: a) cardiac (heart) rate; b) simple stretch reflex; c) rage; d) hunger.

6. Externally released chemical messengers are frequently called: a) hormones; b) exogenous stimuli; c) endogenous stimuli; d) pheromones.

7. The hormone oxytocin is associated with which of the following: a) bonding between sows and piglets; b) hyperactivity in mammals; c) estrous behavior in sheep; d) aggressive behavior in males.

8. The part of the brain that is a vast information storage area is a) hypothalamus; b) cerebral cortex; c) interstitial nucleus; d) reticular formation; e) medulla.

9. Prolactin is a hormone that appears to stimulate a) hyperactivity in females; b) nest building in female birds; c) feeling “good” in female pigs; d) aggressive behavior in females; e) nest building in female pigs.

10. The initial “rush” that people often feel when they first fall in love is believed to be caused by: a) endorphins; b) estrogen; c) oxytocin; d) amphetamines like compounds.

11. Endorphins are a class of hormones that appears to stimulate a) hyperactivity in females; b) nest building in female birds; c) feeling “good” in mammals; d) aggressive behavior in females; d) nest building in female pigs.

Matching (9 pts, there are 9 correct answers, but some may have none, others two)

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<tr>
<td>a. wrote first natural history book on animals</td>
<td>b. releasing or sign stimuli</td>
<td>c. “The Expression of the Emotions in Man and Animals”</td>
<td>d. imprinting in birds</td>
<td>e. color vision in bees</td>
<td>f. won 1973 Nobel Prize</td>
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<td>g. His father wrote to him “... you will be a disgrace to yourself and your family.”</td>
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Short Answer: (3 pts each)

1. Neck tethers and girth tethers are not often used anymore to restrain sows during gestation due to what problem that can directly influence conception rates and size of the litters?

2. The Corpus Callosum is of interest to people in animal behavior because:

3. How do bees communicate to other members of their hive the direction of a food source? That is, what does the scout bee do and how is direction communicated?
4. Dr. Friend told you about a behavioral problem that developed with his large number of baby Jewel fish as they reached maturity. What was the problem?

5. What are two factors that are important in determining if an experience or thought is going to be stored in long term memory?
   1. 
   2. 

6. In the introduction, the authors discussed the idea of the “domestic contract”. Explain what they meant:

7. Define “anthropomorphic”:

8. Why is it useful for a species to develop a social rank among members? (Lorenz’s theory)

9. The need for lobotomy operations on people was eliminated with the development of what technology in the 1960’s?

10. Define “critical periods”: 
11. When discussing behavioral research on cloned pigs, Dr. Friend told the class about “epigenetics”. Explain the term:

12. Occasionally sows will attack or savage their piglets. When or under what conditions is savaging most likely to occur?

13. Tail biting can become a problem in confinement raising of pigs. Discuss how this behavior may begin in a group of pigs and how you might eliminate the problem. (Kilgoure & Dalton lists 18 things to check)

   Cause:

   Eliminate:

14. A common method of restraining pigs is the use of a snout rope or snout noose.

   A. Briefly describe how you would use a snout rope.

   B. How must a pig behave in order for the snout rope to work?

15. Kilgour lists eight suggestions to reduce stress when loading and transporting pigs to slaughter. Describe two of his suggestions.

   1.
   
   2.

16. You are back at the swine facility behind the Vet School last Friday night with your date. You notice a 4th-year vet student who is in an obvious rush to get to the Dixie Chicken. She is about to put a gilt into a group pen that contains about 15 other gilts. After exchanging “Howdy’s”, she tells you that the gilt was removed from that group about three weeks ago because she (the gilt) became sick. Because you just read the section in Kilgour’s book about this problem, you explain to her (the vet student) that she may be making a mistake because:

   Also, what role could the gilt’s social rank in the group have to do with things?
17. Baby pigs are born with instinctive behavior regarding where they urinate and defecate. Give two ways that modern farrowing crates conflict with the natural defecation patterns of pigs.

1. 

2. 

18. According to Kilgour, sows in farrowing crates often show heightened activity a few hours before farrowing, which can result in lacerations, bruising, abrasions and exhaustion. What is probably the cause of this heightened activity?

19. People in the swine industry are trying to come up with a replacement for gestation crates. Electronic sow feeders are often used, but what are two of the behavior-related problems or trade-offs that farm managers have to resolve when using those feeders.

1. 

2. 

20. You decided to make a trap to catch the feral pigs that are rooting up the Traditions Golf Course. You impress Jack Nicklaus (the designer of the course) so much when you tell how to make a simple and humane system to catch the pigs as they come up to eat that he gives you a very nice contract to control the feral pigs on all of his golf courses. Your system for catching the pigs works with the natural behavioral ecology of pigs and is modeled after the feral pig trap in Kilgour’s book. What did you tell Jack?? (You could draw it.)

21. Land Grant Universities established the first faculty positions in Applied Ethology in response to what need in animal agriculture?

22. When discussing the little boy who was taken hostage and kept in the bunker for days until his kidnapper was shot in the bunker by police 2 weeks ago, some of the medical experts on TV were commenting on the possibility of PTSD, post traumatic stress disorder. Are severe cases of PTSD easy to overcome? (explain why or why not).
23. List two factors that are important in keeping commercial laying hens from becoming broody.

1.

2.

24. Proposition 2 in California is the first state law that requires that laying hens be capable of performing a number of “natural behaviors”. What are three behaviors that laying hen farms are trying to accommodate as they redesign their facilities.

1.

2.

3.
22. (5 pts) Describe the major behaviors that sows farrowing in a pasture typically display and when and for how long those behaviors occur starting 24 hours before farrowing until they combine their litter with other sows. Use the list format given below:

<table>
<thead>
<tr>
<th>Behavior</th>
<th>When it occurs in relation to farrowing</th>
<th>and approximate duration</th>
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