Exams without names cannot be graded! Your name must be on each page!

Section A: 1-19. Name the numbered structures in the diagrams provided. (2 pts each, total of 38 pts)

What event is happening at each of the indicated points:

1. ____________________________ 2. ____________________________
3. ____________________________ 4. ____________________________

[Graph showing changes in estrogen and progesterone levels during the estrous cycle.]
5 - 9. What are the main functions of the principle regions of the vertebrate digestive tract? (2 pts each)

5. Headgut: ____________________________

6. Foregut: ____________________________

7. Proximal midgut: _____________________

8. Distal midgut: ________________________

9. Hindgut: ____________________________
10 - 19. Name the indicated structure.

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SECTION B: Each correct answer is worth 2 points. Total 60 points.

1. The male equivalent of oogenesis is:

2. What is the first secretion mixed with food:

3. DNA is a polymer of four bases known collectively as:

4. When talking about metabolism what does anabolism mean:

5. What is the hypothalamic hormone that causes release of LH and FSH:

6. What is the main hormone secreted by the posterior pituitary gland:

7. What is lactogenesis:

8. The sum of all chemical reactions in the body is called:

9. What are 3 types of gene action:

10. What is the main hormone that induces the growth of mammary gland duct tissue:

11. What is the LH sensitive cell in the testis that produces testosterone:

12. What is hypertrophy:

13. The building blocks of polypeptides are:

14. The mammary gland is what type of gland:

15. Different forms of a gene are known as:
16. What is a phenotype: __________________________

17. What is heritability: __________________________

18. A female bird normally only has a functioning ovary on which side: __________________________

19. Is a GMO the same thing as a genetically engineered animal: __________________________

20. Cloning is: __________________________

21. What are innate behaviors you are born with called: __________________________

22. What does it mean to be heterozygous at a locus: __________________________

23. What is the one cell embryo called: __________________________

24. Are all fats (lipids) considered non-essential nutrients: __________________________

25. What makes up, or causes, an individual’s phenotype: __________________________

26. In the mammary gland parenchyma is what two types of tissue: __________________________

27. What is the single most essential nutrient: __________________________

28. Most eukaryotic genes are structurally characterized by having: __________________________

29. Bile salts are secreted by the: __________________________

30. Name the 3 areas in which livestock can affect the environment: __________________________
SECTION C. Point value of each question is given with the question. Total 32 points.

1. (6 pts) What are the three mechanisms that lead to each individual animal inheriting a unique genotype?

2. (6 pts) What is meant by the term random genetic drift? When is it likely to occur and what are the possible outcomes?

3. (4 pts) List four possible types of changes that we can now make in animals using genetic engineering.

4. (4 pts) What is a transgenic organism?
5. (12pts) Draw and label a diagram of meiosis, including DNA content, and indicate where crossing over occurs, at what stage it is arrested in oogenesis, and the differences in the results between males and females.

Extra credit: For 2 points, name the world’s most famous ewe?

For two more points where in the digestive tract would you find glycocalyx?