(12) 1. List the four phases of the estrous cycle and describe each.

- Proestrus: Here the female readies herself for ovulation. Includes an increase in hormones - estrogen.
- Estrus: The actual time period where the female is receptive to the male. This is when ovulation usually occurs. LH surge.
- Metestrus: Yere the ovary has been fertilized the body prepares for pregnancy. Progesterone will maintain the pregnancy in this phase.
- Diestrus: Where the female is not pregnant or the ovum hasn't been fertilized. The body sheds the buildup in the uterus and the cycle begins again.

(5) 2. Label the following drawing.

1. Mitotic 7. Cell division
2. Nucleus 8. Mitotic
4. Nucleus 10. Mitotic
5. Nucleus 11. Mitotic

(10) 3. When does actual fertilization occur? After fertilization there are three stages of the developing offspring. Describe each.

Fertilization occurs in the upper 1/3 of the oviduct, usually the infundibulum. After fertilization it becomes a zigote, meaning that the haploid cells have joined to make a diploid. There is no way of stopping at this point. Then it becomes a blastocyst and hollow ball of cells that continues to divide. The last stage is an embryo, where it begins from the zona pellucida and is a free living organism. It usually has limbs at this stage.
(7) 4. Label the drawing of the Bovine mammary gland.

(8) 5. List four special additive feeds used in dairy rations to increase milk production and explain how each accomplished their increase.

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Please laugh right here, because I don't know what I'm talking about! You didn't do that.

(5) 6. What makes up semen and list four ways it is evaluated.

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(6) 7. Define DHI (Dairy Herd Improvement) and its significance in improving milk production.

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(5) 8. Why is it important for dairymen to feed high quality roughage to their dairy cattle?

The roughage is high in fiber, and the bacteria, the fiber, the more activity in the rumen. When the bacteria is stimulated, their is an increase in the production of milk. The activity causes strength, buildup, in the reason to begin to move out.

(6) Label the parts of the testes shown.

(5) 9. How is buttermilk manufactured today versus yesterday (that's in my day).

Yesterday it was the liquid left from turning butter or cream that is into butter. It had all the enzymes that were natural to it and had gone through natural fermentation.

Today they make buttermilk by fermenting the fermented buttermilk. They add sugar and control fermentation only 14.5%.

It is no longer a by-product, by the product of processing.

(3) 10. What’s scarier, a ghost, goblin, or an AVS 109 test.

AVS 109 TEST / no it not that loud!

(5) 11. How is a passive immunity given from the cow to its offspring?

Through the colostrum which has a high content of immunoglobulins. Colostrum is the initial milk produced by a female after parturition and is maintained for about 48 hours.
(5) 12. What are the functions of scrotum?

The basic function of the scrotum is to house the testicles. The main function is to regulate the temperature of the testicles, which is best suited for sperm production. It retracts in the cold and releases in the heat.

(18) 11. Define:

a. Rete testis - where the sperm goes right after formation, to mature for a while, this is a transportation and storage organ.

b. infundibulum - the upper part of the ovary. It is very loose, and its purpose is to collect the ovum after ovulation. This is usually when fertilization takes place.

c. spontaneous ovulators - those that don’t require mating to ovulate, they have their own cycle of oocytes either polycystic, monochrous or seasonal polyoestrous.

d. colostrum - the initial milk produced by the female after parturition. It is high in immunoglobulins and is held by the female for consumption.

e. epididymus - where spermatogenesis is produced, the sperm travels through here and is required for part of the maturation process to inseminate it.

f. acrosome - is on the head of the sperm and has enzymes called acrosins that dissolve the ovum's wall to get to the egg.

g. LH surge - a surge of the luteinizing hormone right before ovulation that causes ovulation and is mediated through and for release of the ovum.

h. Morula - part of the blastula stage, it divides into 4 cells a piece, place them on round corn yolks, yolk-sac embryos mature into fertilized.

i. parturition - when the female gives birth, the fetus is expelled from the uterus.