(9). At least three laws passed by the US Congress had far reaching effects on higher education and the citizens of this country. List the three laws and, for each, three things they provided.

The Lanman-Grandy Act of 1862 which provided 30,000 acres of land that could be sold for money for a school, the teaching of agriculture, and it was tax. The Hatch Act of 1887 which provided by research workers at research stations. The Smith-Lever Act of 1914 which provided cooperative extension system, county offices of land grant universities. For H.

(6.2). Consumers guides to good nutrition are provided to the public from at least three sources. List three guides and tell what they include, and who publishes them.

RDA - Recommended daily allowances - published by the National Academy of Science
Dietary Food Choices - Published by the USDA for food groups
Dietary Guidelines - published by the USDA for nutrition and healthy eating

(4.3). What are the major differences between DNA and RNA?
DNA is made up of nucleotides and is the compound a 5 to 4
RNA has one more oxygen molecule in the compound and has the base uracil instead of thymin.

(5.4). What are the five basic human needs and show how animals provided for those needs?
Food, water, shelter, hygiene, clothing - hair, coat, wool, crocheted, wearing, pelt, dressing

(5.5). What is a nucleotide and how does it function?
A nucleotide is the combination of deoxyribose, phosphorus, and one of the bases. When they are bonded together they form a strand which is 1/6 of a DNA molecule.

(5.6). Polled condition in cattle is a dominative trait. If a horned Hereford and a polled Angus were mated, what would be all the possible combinations of genetic expression in their offspring.

If the polled Angus was homozygous, the genetic expression of their offspring would be 3:1 of polled to horned. If the polled Angus was homozygous, the genetic expression would be 1:0.

(8.7). There are structural genes and control genes in each of us. The structural genes provide the expression of a trait and are usually a single pair of genes. What are the two types of control genes and how do they function?

The regulatory type that regulates the structural gene as to how much it produces, and the operator type that turns the regulatory gene on or off.

(6.8). Define the following:

a. Agriculture: the utilization of biological processes to produce food.
b. Domesticate: to bring wild animals under the control of humans - eventually impounding the species by selection and handling.
c. Animal Science:

(10)9. Sex linked traits are passed on through the X and Y chromosome. Calico cats are either black and white or orange and white. The black gene does not dominate the orange gene. Why are the tri-colored (black, orange and white) calico cat 99.9% female? It is best to use a genetic explanation where B=Black and O=orange and tell why a male cannot be tri-colored.

(6)10. List the genus and species name for wild cattle _Bos Primigenius_ and the genus and species names for the two types of domesticated cattle _Bos taurus_ and _Bos Bubalis_. What are the genus and species names for swine _Sus Scrofa domesticus_, chickens _Gallus domesticus_, and sheep _Ovis aries_.

(6)11. Why is cholesterol considered a bad guy in Coronary Heart Disease.

A lot of the blame comes from the medical. Cholesterol forms on the walls of arteries to repair lesions, the blocks the blood flow it causes myocardial infarctions.

(5)12. Is there any way to make genetic progress today by selecting the cow herd only? Explain your answer.

(5)13. What are EPD's and what do they measure?

EPD are expected progeny differences and they measure birth weight, weaning weight, milk production, and yearly weight.

(10)14. Yearling weight in cattle is a highly inherited trait. What would be the genetic improvement each year in yearling weight for cattle if the average of the population is 1500 pounds and the selected males from that population were 1900 pounds and the selected females were 1600 pounds. The generation interval for cattle is five years and the heritability estimate for yearling weight is 40 percent. (Show work)

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\frac{1900 - \frac{40}{5}}{1500} = \frac{100}{5} = 20 \text{ lbs/yr}.
\]

(10)15. Explain by using and labeling a diagram Oogenesis.