1. You are probably already well aware that you are more likely to learn something if you have to teach it to someone else. Many people in this course are homeschooling their children or younger siblings. One of the hardest organ systems to teach about is the endocrine system. Write a short narrative paragraph that would introduce the endocrine system to another adult with no background knowledge on the topic. Include: why the endocrine system is important, examples of endocrine organs, and basics on hormones (what they are, where they come from, where they go, and what happens).
   My answer: The endocrine system is important because it communicates with the nervous system to be able to coordinate responses to our organs. Some organs are the pituitary gland and thyroid. Hormones are chemical messengers that can change the behavior of a cell. They only go to targeted cells, like a key to a keyhole. One change in cell behavior might be how much a cell should produce something that an organ needs.
   Better answer: Missing a few details: The endocrine system is the chemical/hormone communication system in the body that helps coordinate everything to maintain homeostasis (balance). The organs of this system build and secrete hormones into the blood where they travel to other organs of the body and cause those tissues and cells to do things (build, work, rest, breakdown stuff). There are often hormones produced that have opposing actions to keep homeostasis (balance) in the body. For example, the pancreas releases both insulin and glucagon. Insulin is released when blood glucose (simple sugar) levels go up (say after a meal), this causes cells to take up the extra blood glucose and store it as glycogen (more complex sugar). When blood glucose levels go down (if it has been awhile since a meal), glucagon is released by the pancreas, stimulating cells to break down their stored glycogen and release the sugar as glucose back into the blood.

2. Number this answer 1 through 7. Using your notes, for each of the seven organs introduced in the video, say (A) what the organ is, (B) where it is located, and (C) the hormone(s) it produces.
   My answer:
   Pineal gland: below hypothalamus in the brain and produce melatonin
   Pancreas: within the upper GIT and regulate the level of sugar (glucose) in blood by producing hormones insulin and glucagon
   Thyroid: Wrapped around trachea and produces thyroid hormones to do things like increase cellular activity through increased metabolism and growth
   Parathyroid: four of them on top of the thyroid and releases parathyroid hormone (PTH) to balance blood calcium
   Kidney: sides of intestines too produce calcitriol and renin
   Testes: lower GIT and produce androgens, estradiol, inhibin
   Uterus: lower GIT and produce prolactin and relaxin
   Ovary: edges of uterus and produce estrogens and progesterone
   Better answer: Pituitary gland, center of the mid-brain, many hormones including; growth hormone, oxytocin, vasopressin, thyroid stimulating hormone (TSH), Follicle Stimulating Hormone (FSH), Luteinizing Hormone (LH), Prolactin, Melanocyte Stimulating Hormone (MSH), Adrenocorticotropic hormone (ACTH).
   5) Adrenal gland on top of each Kidney, release adrenalin from the medulla and cortisol for, the cortex

3. An individual tries a diet that dramatically cuts calories. The body responds by initiating the long-term stress response. Describe which hormone is released from the adrenal glands and the impacts this hormone has on the body.
   My answer: The cortex of the adrenal glands releases cortisol. The long term stress is usually for dealing with starvation, but during modern times, long term stress comes from other constant factors. The issue is that the body does not recognize the difference so any long term stress is seen as a sign of starvation.
   Increase blood sugar
   increase blood pressure (BP)
   increased attention/alertness: lead to anxiety
   decreased sensation: pain
   decrease of serotonin: lead to depression
   decreased immune response: decrease energy to bone marrow and white blood cells
   Better answer:

4. Repeatedly in this course there has been an emphasis on needing fat in the diet. Describe two ways fat (in the form of fatty acids) contributes to overall metabolism, and the role of fat in appetite.
   My answer: Adipose tissue produces hormones like lepin, resistin, estrogen, and others. Leptin increase makes people feel full while ghrelin, produced from the stomach, makes people feel hungry. Fat is important but increased amounts of fat storage correlate with an increase in a variety of diseases. Extra fat = extra hormones. This could mean that target cells are doing excessive work.
   Better answer: