Question 1: People get excited about the cardiovascular & digestive systems, but often don't think much about the integumentary system. Provide an argument for why the integumentary systems is a critical organ system, including detailed descriptions of four of the system's functions.
Answer: The integumentary system is primary on the skin organ. Part of the skin is also the appendages (hair, feathers, scales, nails, beaks). The skin is very important part of the body because of multiple reasons. It protects our body from potential pathogens. Allows our hands to be able to grip. One small aspect being Vitamin D synthesis. Oil production so that our skin doesn't dry up and crack. Helps regulate temperature so the body does not overheat/freeze up. Finally, skin allows us to be able to feel with receptors.

Question 2: Describe what dermatitis and acne are, and the stages of wound healing that occur after the skin is injured.
Answer: Dermatitis is an itchy inflammation, like a rash. Acne is the product from the excess production of oil that has dried and hardened.
There are four stages to wound healing and one part when it does not fully heal. These go in order.

1. Clot forms: fibrous protein that stops the bleeding, plugs the would so external extremities cant get in the body
2. Inflammation: blood leak into area. Increase of fluid that causes swelling, white blood cells to fight off bacteria that have entered the skin
3. Mitosis: replacing the lost cells
4. Differentiation: changing to necessary cells

Finally a scar and occur. Scar is the product of constant irritation of a healing area. Because the wound keeps opening up, it produces a large amount of collagen to close off the area

Question 3: From your notes on the labeled skin model (video), identify structures A, B, C, D, E, and F and also provide the basic function of each structure.

A. Epidermis: has the skin, hair, and pores, squamous (flattened cells), cuboidal (cube cells), columnar (column cells)
B. Dermis: sweat glands, hair follicle, arrector pili muscle (moves the hairs), sebaceous oil glands, red/blue blood vessels, sensory receiving organ (light, heavy, hot, cold receptors)
C. Hypodermis/subcutaneous: fat
D. Sebaceous oil glands: produces the oil to keep the skin moisturized
E. Sweat glands: activate to evaporate skin and help regulate body temperature
F. Red/blue blood vessels for intake in oxygen

Question 4: You have a family member that is worried that a spot on their skin may be skin cancer. Tell them (A) what characteristics they are looking for; (B) what may be happening beneath the skin if it is skin cancer; (C) the best and worst types of skin cancer they may have; and (D) why they should see medical assistance if they are concerned, rather than self-diagnosing.
Answer:
A. There are a lot of things to look for like skin texture and discoloration. Basically, anything that might not look like their normal skin.

B. If it is skin cancer, cells undergo excessive mitosis, producing large numbers of cells. The cell type that originally mutated (changed genetically) impacts the type of cancer that develops
C. There is Basal-cell carcinoma. It lies at the bottom of the epidermis, directly above the dermis. This skin cancer is the most common and least deadly as it rarely metastasizes (spreads). Next is Squamous-cell carcinoma. The flattening keratinocytes higher in the epidermis are called squamous cells and they can also mutate and become cancerous. This skin cancer is less common than a basal cell, but more likely to metastasize. Melanoma is melanocytes in the epidermis that can also mutate. “Malignant” means capable of spreading, and this skin cancer is the least common, but most likely to metastasize.
D. The issue with self-diagnosing is that we often only care about what is happening at the surface of the skin. It is more often that a lot is going on underneath and within the skin (dermis/hypodermis).