Fall 2022 Name: _____

The hypothalamus, brainstem, and spinal cord have areas that detect temperature and enact thermoregulatory processes.

a. Which of those regions is most precise?
_____

b. Which is least precise?
_____

c. What are 2 "thermoregulatory processes" that could be enacted (if you aren't sure, look on slide
5)_____
_____
_____

Consider a fever…

a. What part of the immune response triggers the fever? _____

b. What part of the brain controls and raises the set point? _____

c. Why do you feel cold when a fever begins?
_____
_____

d. Why do you feel hot when a fever breaks?
_____
_____

e. What is a behavioral fever?_____
_____
_____

a. The mammalian body is _____% water.
b. Water inside cells is in the _____ compartment.
c. Water outside of cells is in the extracellular compartment, which could be _____ or _____.
d. What 2 pieces of information are helpful for the brain to inhibit thirst_____
_____
_____
_____
e. What type of thirst (osmotic or hypovolemic)?
    a. From eating salty foods: _____
    b. From bleeding: _____
    c. Loss of fluid and solutes: _____
    d. Results from increased concentration of solutes in extracellular fluid: _____
    e. Osmotic pressure draws water out of cells: _____
    f. Vasoconstriction necessary to keep blood pressure up:
    _____
    g. Involves sodium-specific hunger to replenish solutes:
    _____

Insulin and glucagon are hormones made by the _____. Together they regulate blood sugar, but each has a distinct role.
What is the role of insulin?_____
_____
_____
What is the role of glucagon?_____
_____
_____
Which increases when you eat, and which increases when between meals?
_____
_____

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A hormone or neurotransmitter that is released when glucose or energy reserves are low and which stimulates hunger is called a _____ signal; a hormone or neurotransmitter that is released toward the end of a meal or when energy reserves are high is a_____ signal.

For each of the following, indicate if it signals ***hunger*** or ***satiety***, and whether that is relevant for ***short-term*** control of ingestive behavior or ***long-term*** control of ingestive behavior:

Serotonin: ____satiety/short-term_____
Orexin: _____
Leptin: _____
Endocannabinoids: _____
Ghrelin: _____
CCK: _____
NPY: _____

What type of cells secrete leptin? _____ Leptin sends a signal to the _____ regarding

_____

_____

Why do you think a certain level of leptin is necessary for puberty to begin in females?

_____

_____

_____

The LH and the VMH are two parts of the hypothalamus which are involved in the regulation of food intake. If the LH is lesioned (destroyed), an animal stops eating, and very gradually begins eating again. Name and describe the 4 stages of this process.

1. _____

   _____

2. _____

   _____

3. _____

   _____

4. _____

   _____

Do animals with an LH lesion ever eat as much as they did prior to the lesion?_____

Does this suggest that the LH, when normally functioning, is important for ***hunger*** or ***satiety***? _____

What is the effect of a lesion to the VMH?

_____

_____

_____

Does this mean that the VMH, when normally functioning, is important for ***hunger*** or ***satiety***? _____