TEST 4

Modules 7 & 8

******(It will be very helpful to use this as a study guide. While all the questions are taken directly from the GA Virtual site in some capacity, many of the answers were hard to find within the site's many links. I looked up many of the answers online by typing questions into the Google search engine.)

Endo – within, inside

Exo - outside. outer

Para - beyond
Toc - labor, childbirth
Diure - urine
Trophic - relating to nutrition
Glyco - sweet, sugar
Thyro - relating to thyroid
Ovario - ovary

Endocrine System -releases chemicals to help maintain homeostasis, including growth, development, reproduction, and metabolism

Hormone - a chemical released by a cell in one part of the body that sends out a message to another part of the body

Gland - a cell or group of cells that produce a secretion to affect another part of the body

Endocrine Gland - a gland that produces a secretion that goes directly into the blood stream; such as the thyroid and pancreas

Exocrine Gland - a gland that produces a nonhormonal secretion that goes directly into a duct; such as sweat glands

Target Cell - a cell that has receptors for the product of another cell

Receptor - a structure on a cell that binds with something, such as a hormone

Steroid Hormone - a steroid that acts as a hormone

Peptide Hormone - an amino acid that acts as a hormone

Pituitary Gland - located at the base of the brain; produces hormones that influence emotion and responds to seasonal changes; produces growth hormone

Pineal Gland - produces and secretes melanin

Thyroid Gland - releases hormones to help regulate metabolism; helps the body uses energy, makes proteins, and controls how sensitive the body should be to other hormones

Pancreas - A gland that produces hormones, such as insulin and digestive juices to break down carbohydrates, proteins, and lipids.

Ovary - gland in the female body that produces estrogen and progesterone

Testis - an organ in the male body that produces testosterone

Adrenal Gland - located on top of the kidneys; produces hormones that help to regulate blood pressure, blood sugar, growth, some sexual characteristics, and "flight or fight" response

Kidney - produces a hormone that makes red blood cells

The endocrine system works with the nervous system to:

A. Maintain homeostasis

B. Control Reproduction

C. Control development

D.

Hormones are substances that fall into two general categories:

A. Hormones the body synthesizes from cholesterol (a lipid). ____Steroid hormones_____

B. Hormones made of amino acids. ____peptide hormones_____.

"**Endocrine System**"

Match the hormones to their glands.

pituitary gland- luteinizing hormone

adrenal gland - cortisol

thyroid gland - thyroxine

parathyroid gland - parathormone

hypothalamus- GnRH

pancreas - glucagon

thymus gland- thymosin

pineal gland - melatonin

kidney - erythropoiten

pancreas - insulin

adrenal gland - adrenolin

stomach- gastrin

testis - testosterone

GnRH

thymosin

testosterone

insulin

luteinizing hormone

glucagon

adrenalin

erythropoiten

gastrin

cortisol

parathormone

thyroxin

melatonin

Complete the graph below:

GLAND	HORMONE RELEASED	FUNCTION	WHAT HAPPENS WHEN FAILURE OCCURS	LOCATION	REFERENCE(S)
PITUITARY	SEVERAL. GROWTH HORMONE	CAUSES GROWTH IN ALL TISSUES AND CELLS	STUNTED GROWTH	BASE OF THE BRAIN	VIRTUAL MEDICAL CENTER
THYROID	THYROXINE	INCREASES METABOLISM	TIRED AND WEIGHT GAIN	CENTER OF NECK, BELOW THE ADAM'S APPLE	VIRTUAL MEDICAL CENTER

PARATHYROID	PARATHYROID HORMONE	RELEASED WHEN CALCIUM LEVELS ARE LOW	NOT ENOUGH CALCIUM	BACK OF THE THYROID GLAND	LAB TESTS ONLINE
PANCREAS	INSULIN	REGULATES BLOOD SUGAR	DIABETES	LIES BEHIND THE STOMACH	VIRTUAL MEDICAL CENTER
THYMUS	SEVERAL	DEVELOPMENT AND MAINTAIN IMMUNE SYSTEM	TURNS INTO FAT AFTER PUBERTY	LOWER PART OF THE NECK	VIRTUAL MEDICAL CENTER
OVARIES	ESTROGEN	FEMALE SEXUAL CHARACTERISTICS	UNDERDEVELOPMENT	IN THE PELVIS	LAB TETS ONLINE
TESTES	TESTOSTERONE	MALE SEXUAL CHARACTERISTICS	UNDERDEVELOPMENT	IN THE SCROTUM	LAB TESTS ONLINE
ADRENAL GLANDS	SEVERAL, CORTISOL	WHEN BODY NEEDS MORE ENERGY	TIRED AND WEIGHT GAIN	TOP OF THE KIDNEYS	VIRTUAL MEDICAL CENTER
HYPOTHALAMUS	Growth hormone-releasing hormone	Stimulates growth hormone production by the pituitary	STUNTED GROWTH	LOWER MIDDLE OF THE BRAIN	LAB TESTS ONLINE

Diagnose the patients:

Patient 1:

51 year old Male

Symptoms include:

Being very thirsty

Urinating often

Feeling very hungry or tired

Losing weight without trying

Having sores that heal slowly

A. What disorder is the patient suffering from? Diabetes

B. What hormone is causing it? Lack of Insulin

C. Is the hormone being hyposecreted or hypersecreted? hyposecreted

Patient 2:

26 year old Male

Symptoms include

Weight loss

Muscle weakness

Fatigue that gets worse over time

Low blood pressure

Patchy or dark skin

A. What disorder is the patient suffering from? Addison's Disease

B. What hormone is causing it? Cortisol and aldosterone

C. Is the hormone being hyposecreted or hypersecreted? hyposecreted

Lacri - tear

Sclera - outer covering of the eye

Vitre - vitreous part of the eye, glass or glassy

Oculo -eye

Cornea - transparent front part of the eye that refracts light

Pupil - located in the center part of the iris; controls the amount of light that enters the eye

Lens - focuses the image onto the retina

Retina - back part of the eye; where the photoreceptors are located

Oto -ear
Cochlea - spiral-shaped cavity of the inner ear
Olfact -sense of smell
Rhino - nose
Gust - referring to taste
Os - mouth or opening

Chemoreceptor - a receptor that detects certain chemical signals in the environment
Proprioceptor - a type of sensory receptor that receives stimuli from within the body; usually related to position and movement
Thermoreceptors - a type of sensory receptor that receives changes in temperature
Photoreceptor - a type of sensory receptor that receives and responds to changes in light
Mechanoreceptor - a type of sensory receptor that receives and responds to changes in mechanical stimuli
Baraoreceptor - a type of sensory receptor that receives and responds to changes in pressure

Explain cones and rods. Explain their functions and the differences between them. Rods are responsible for vision at low light levels (scotopic vision). They do not mediate color vision, and have a low spatial acuity.

Cones are active at higher light levels (photopic vision), are capable of color vision and are responsible for high spatial acuity.

Label the eye:

(NEED THE EYE DIAGRAM HERE)

Label the parts of the ear:

(NEED THE EAR DIAGRAM HERE)

True or False:
Body hair plays an important role in the ability to sense touch. true

Where are receptors for touch concentrated? A,C,D

- **a.** face
- **b.** knee
- **c.** fingertips
- **d.** tongue
- **e.** nose

. Explain why the eye has a blind spot.

There is a spot on your retina that does not contain any rods or cones (the cells that take in light stimuli and send the information to our brain, which then interprets that information into the images you see) and hence is why you have a blindspot.

1. What are sensory receptors? An organ having nerve endings that respond to stimulation.

2. List the five general categories of sensory receptors.
a. mechanoreceptors
b.thermoreceptors
c. pain receptors
d. electromagnetic receptors
e. chemoreceptors

3. Which category of sensory receptors are sensitive to touch, sound, and motion?
mechanoreceptors

Vision
4. Which sentence(s) is/are true about the structures of the eye? A, C
a. Light enters the eye through the cornea.
b. The anterior chamber is filled with vitreous humor.
c. The pupil changes in size to let more or less light enter the eye.
d. The lens focuses light on the retina.

5. Is the following sentence true or false?

The function of the iris is to adjust the size of the pupil. True

6. Where are the photoreceptors located in the eye? The outermost layer of the retina

7. What do photoreceptors do? They convert light to electric impulses

8. Is the following sentence true or false?

Cones are extremely sensitive to light, but they do not distinguish different colors. False

9. How do impulses travel from the eyes to the brain? The photreceptors convert light into electric impulses which are sent along the optic nerve to the brain.

List the two sensory functions of the ear.
a. hearing
b. equillibrium

12. How does the body detect smell? **Smell**, like taste, is a chemical sense detected by sensory cells called **chemoreceptors**. When an odorant stimulates the chemoreceptors in the nose that detect smell, they pass on electrical impulses to the brain. The brain then interprets patterns in electrical activity as specific odors and olfactory sensation becomes perception -- something we can recognize as smell. The only other chemical system that can quickly identify, make sense of and memorize new molecules is the immune system. Taken from http://science.howstuffworks.com/life/human-biology/smell.htm

13. Is the following sentence true or false?

Much of what we commonly call the "taste" of food and drink is actually smell. true

14. The sense organs that detect taste are the __taste buds/tongue_____.

15. List the four different categories of tastes.
a. Sweet
b. Sour
c. Bitter
d. Salty

Touch and Related Senses
16. What is the largest sense organ? Skin

17. Is the following sentence true or false?

The skin contains sensory receptors that respond to temperature, touch, and pain. true

18. Which is true about the sense of touch. A
a. Unlike the other senses, the sense of touch is not found in one particular place.
b. All parts of the body are equally sensitive to touch.
c. The greatest density of touch receptors is found on the arms and legs.
d. Touch is detected by mechanoreceptors.

19. Where is the greatest density of touch receptors found on the body? Lips and fingers

20. Discuss the role of hair in each of the 5 senses.

1. Hair located in the inner ear detects vibrations and sends messages to the brain.

2. Nose hair is a defense, as it traps particles.

3. Eyelashes keep dust and particles from reaching and infecting the eye.

4. Body hair plays an important role in the ability to sense touch. Large numbers of mechanoreceptors are found in the skin at the base of hair follicles.

5. The specialized taste cells are continuous with gustatory hairs, which extend through the taste buds.