



Highlander Help

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Good Luck!

GENERAL BIO 101 - LAB MIDTERM

92.5

+ 95

Fall 2008

PRINT your name: _____

Date 10/21/08

Discussion section: 11

Discussion Leader: Priti Dhabekar

Instructions

You have 90 seconds at each station. Please limit your answers to the space provided.

Read all the questions carefully, write clearly. GOOD LUCK.

Part 1 Station Questions

Station 1- PIG ABDOMEN (8 pts)

- 1) Identify the structure A. Which substance it stores? (4)

The Gall bladder stores bile which is used for the digestion of fats

- 2) Identify the structure B. Which substance it secretes? What is the use of this substance to the body? (4)

The pancreas, it secretes insulin along with other digestive enzymes. Insulin regulates the concentration of sugar in the blood, while the enzymes digest carbs, protein and fats.

Station 2-PIG THORAX (6 pts)

- 1) Identify the structure A and B. (2)

B is the thyroid gland trachea
A is the esophagus

- 2) What is the difference between the structure of A and B? How the structure of A and B affect their function? (4)

The esophagus carries food to the stomach, and the ~~longer~~ trachea is the wind pipe where air flows to the lungs. The trachea has cartilaginous rings which keeps it steady for the flow of air, while the esophagus is flexible which allows it to contract for the swallowing of food.

Station 3-SHEEP HEART (8pts)

1) Identify the structure A. (2)

The left ventricle

2) Identify the structure B. (2)

The right ventricle

3) Give two differences between structure A and B (Hint: Left or right side is not an answer)

(4) The left ventricle pumps blood to the body and the right ventricle pumps blood to lungs

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Station 4-ROACH (8 pts)

1) Identify the structure A and B. Give one function of each. (4pts)

Structure A is the crop which stores food

Structure B is the proventriculus which pulverizes food

2) Which structure in cockroach analogues to kidney in humans? (2pts)

The malpighian tubules are analogous to the kidneys because the circulate nitrogenous wastes out the body.

3) Why circulatory system of cockroach is called as open circulatory system? (2pts)

because they lack blood capillaries, which then cause the organs and blood to bath in ~~lymph~~ hemolymph.

Station 5-SKULLS (6pts)

1) Observe the skull A and B carefully, Compare or contrast what you think was the diet of these two animals and briefly explain why. (4)

Skull B is a carnivorous organism which eats meat and the teeth are use to rip the meat apart. While skull A is a the skull of an herbivore because they are flatter.

2) Why browsers have chisel-like teeth? (2)

used for the ^{mechanical} breaking up of ~~the~~ grass and herbs

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Station 6-SHEEP EYE (8pts)

1) Identify the structure A. What is its function? (2)

The retina which is the metabolically active part that contains light receptors which send them to the optic nerve.

2) Identify the structure B. what is its function? (2)

The scleral layer which protects and shapes the eye

3) What does structure A and B become at the anterior of eye? (4)

The scleral becomes the cornea while the retina is not present but the lens send the light and the image to the retina.

Station 7-SHEEP BRAIN (8 pts)

1) Identify and list the function of A, B, and C. (6pts)

A Cerebellum regulates balance and coordination

B Thalamus which relays sensory information to and from the cerebrum

C medulla regulates heart and breathing.

2) Which part of brain is related with the sense of smell? (2pts)

The olfactory bulb

Station 8-CHICK EMBRYO (6pts)

- 1) Identify the structure A and B in chick embryo diagram. (2)

A is the allantois membrane
and B is the optic cup

- 2) Give the function of structure A? (2)

+2 The allantois membrane is responsible for gas exchange

- 3) What are the main features of 56-hour chick embryo? List at least 2. (2)

The 3 part brain (fore brain, mid brain, hind brain) and the vitelline veins are present and visible, the heart is a pulsating.

Part 2 Short Answer Questions

- 1) Why the digestion in hydra is called as combination of extracellular and intracellular digestion? Please include the name and functions of the cells involved. (4pts)

The hydra use both intracellular and extracellular digestion. The gland cells are part of the extracellular digestion because they digest particles outside the cell, while the digestive cells combine with lysosomes to digest the particles inside the cell. Digestion occurs outside and inside the cell.

- 2) Which organ function same as teeth in chicken? How? Which is other organ they have common with cockroach? (3pts)

-0.5 The Gizzard in the chicken functions the same as teeth in humans because the gravel and the grain stored there mashes and grinds food which is similar to the proventriculus in the cockroach.

- 3) What are the 3 primary germ layers formed during the gastrulation? In which structures these germ layers eventually develop? (3pts)

The primary layers are the ectoderm, mesoderm, and endoderm. They are developed in Gastrula and the ectoderm becomes skin and the nervous system, the mesoderm becomes bones and muscles and the endoderm becomes the digestive organs.

- 4) Explain the difference between primary induction and secondary induction. Development of eye is an example of what type of induction? (4pts)

Primary induction occurs when two primary germ layers interact and form a system or a layer like the brain and spinal cord, and secondary induction occurs when a layer or system produced from the same germ layer forms a new organ. The development of the eye is an example of secondary induction.

- 5) What is tapetum? How it is useful to some animals? (4pts)

The tapetum is the colorful part of the eye found in nocturnal animals and fish which reflects light a second time making use of the dim light allowing the animals to see in the dark.

Part 3 Discussion Questions

- 1) What is Preimplantation genetic diagnosis (PGD)? Give future consequences of this technology. (8pts)

PGD is the diagnosis of embryos and detecting the presence of certain genetic disorders. Parents are able to select what their kids have and not have, and are able to prevent diseases such as diabetes, cancer, and Parkinson's disease. Some of the consequences is that it is too expensive for it to be practical, and it eliminates the poor population from joining. Besides the fact that it is too expensive, it is also unethical because humans are not good at playing the role of God. Parents should just live with what they get. In addition, the results of PGD are often unpredictable, allowing the disease to exist anyway.

- 2) Give 2 difficulties involved in finding vaccine for AIDS? If you are a research scientist working in developing country then what plan of action you will take to fight against HIV? (8pts)

Strain
The vaccine for AIDS is difficult because the virus is a retro virus, which means it can change shape and become a new strain. It is also difficult because an attenuated vaccine for AIDS doesn't work because it still latches on to the DNA allowing its information to get into the DNA. Besides that it is extremely expensive not practical for the less developed countries. If I was a research scientist in a developing country I would first think of a virus that will be cheap enough for it to be practical to be administered among the people, I would also educate the people and teach about safe sex.

- 3) What are stem cells? Give two advantages of using adult stem cells over embryonic stem cells? (8pts)

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What?
Stem cells are cells that can differentiate into other cells. The adult stem cells are multipotent which means that it can differentiate into a limited number of cells. One major advantage in using adult stem cells is that it doesn't require the killing of the embryo as opposed to embryonic stem cells. And also the adult stem cells are more focused and targeted than the embryonic stem cells, and the embryonic stem cells can differentiate into a lot of cells which can hurt the body.