Unit 10 – Diversity in Transport- Week 1

Instructions: Read the background material for this unit and then complete each of the activities associated with week 1 of the Transport lab. These activities match those in the lab manual. Videos, simulations, and images necessary for completing the activities are located on the lab website. After you have finished them, you will complete the Assignment listed below.

Activity #1: *Transpiration in Higher Plants*

1. Review the background material on page 168 – 169 and the lab website. The text and labeled diagrams in the lab manual will be quite helpful with interpreting the structures found in the plant tissues labeled #1, 2, 3 and 4 on the lab website.
2. Identify key structures in the leaves and stems associate with transport.
    a. Leaves - stomata, guard cells, leaf layers (cuticle, epidermis, palisade and spongey mesophyll, xylem and phloem).
    b. Herbaceous stems and woody stems (vascular bundles/tissue made up of xylem and phloem, accumulation of growth rings in woody stems).
    c. Which of these structures are directly involved with Transpiration? Translocation?
3. Use the online Virtual lab on Plant Transpiration to simulate Activity 1 on pages 170-171. Follow the instructions on the lab web site for this activity.
   http://www.mhhe.com/biosci/genbio/virtual_labs_2K8/labs/BL_12/index.html
4. Answer Questions 1-3 on page 181.

Activity #2: *Earthworm dissection* (lab manual, simulation, and online videos)

1. Complete the earthworm dissection simulation. Take a screen shot of the completed/labeled external and internal anatomy from the earthworm dissection simulation.
2. Follow the steps #1-8 on pages 175 & 176 and use the online videos on the lab website to review what you learned in the simulation about the closed circulatory system of an earthworm, type of digestion, and structures involved.
3. Take a screen shot of each of these labeled dissections.
4. Answer Questions 4-5 on pages 181-182.

Activity #3: Crayfish Dissection (lab manual and online videos):

1. Follow the dissection steps #1-13 on pages 177-179 and use the online videos on the lab website to learn about the open circulatory system of a crayfish, type of digestion, and structures involved. Answer questions 6, 7 and 8 on page 182.

Spring 2020 – modification of lab for online learning

Diversity in Transport Assignment: (also posted below in the YELLOW assignment box as a Word document).

1. Answer the Qs 1-8 on page 181-182. For #3 answer in relation to light, temperature and wind treatments used in the simulation.
2. Scan your labeled drawings of plant tissues #1, #2, #3 & #4 (from website) on page 180. ***Insert the pictures as images in the template provided below***
3. Simulation, record your data after each run of the potometer.
4. Use all your data to make ONE column graph for all 4 plants with the control and 3 treatment data.
5. Screen shot your labeled animation of the external and internal anatomy of the earthworm. ***Insert the pictures as images in the template provided below.***
6. Compile your work into **one document** and upload to Moodle. You may want to. Save this document and upload as a PDF.

Assignment template: Compile your work into **one document** and upload to Moodle. Note: You may want to save this document and upload as a PDF.

Answers to Questions 1-8 p. 181-182 [insert your work below]

Activity #1: *Labeled Drawings of plant structures (p. 180)*

#1-4 on the lab website: [insert your work below]

Activity #1: Proper *Graph from Transpiration Simulation including all treatments on the 4 different plants in ONE graph.*

Graph: [insert your work below]

Activity #1: *Earthworm dissection – screen shots of your labeled external and internal anatomy animation.*

External anatomy: [insert your work below]

Internal anatomy: [insert your work below]