

Exam2 Key: Lab Practical for Organismal Evolution, Spring 2003

Lab Practical, Spring 2003, Key

You will have 2 minutes to answer each of these 15 questions, and 5 minutes at the end to go over any questions for which you need more time. Make sure to pay attention to the station number where you are sitting!! The numbers of the questions correspond to the number of the stations.

1. A. What is the function of this entire structure (I, II, and III)?

Organism: Basidiomycete mushroom Answer: reproduction

- B. True or False (circle one): Each individual fungus can produce a structure like this on its own.

false

- A. Name the specialized feeding appendages that define the group to which this organism belongs.

Organism: Horseshoe crab Answer: Chelicerae

- B. Which number corresponds to the respiratory organs of this organism? ____

Arrows pointing to book lungs (as well as legs, gnathobases, chelicerae, and telson)

- A. what is the function of the labeled structure 1 in organisms A and B?

Organisms: A. Moss B. fern

Answer: spore production (sporangia)

- B. What is the ploidy of labeled structure 2 in A? _____

Arrow pointing to haploid moss gametophyte

- C. What is the ploidy of labeled structure 2 in B? _____

Arrow pointing to diploid fern sporophyll

- A. When alive, these organisms appear to wiggle when they move, and they use only one type of muscles to do this. Which type of muscle are these organisms using?

Organism: Nematode Answer: longitudinal muscles

- B. Do these animals in this phylum have a coelom? **no**

- A. Is this plant a Monocot or a Dicot? **Name one characteristic** you used to determine this.

Organism: Tobacco plant (a moth pollinated dicot)

Possible answers: net-like venation in leaves, flowers with 5 petals.

- B. This flower is likely to be pollinated by what type of organisms (fly, butterfly, **moth**, bee, bird, or bat)?

A. Why is organism A shaped like a flattened sheet?

Organism: Laminaria (brown alga) **Answer: more surface area for photosynthesis**

B. What material makes up the skeleton of organism B?

Organism: Hydrozoan **Answer: Water (hydrostatic skeleton)**

Which of the labeled organisms is involved in a potentially mutualistic symbiosis? For each one you choose, name the microscopic partner associated with each. For each one you named, say what the symbiotic partner does for the organism (if there is no partner, leave that one blank).

Partner (if any)	Benefit from partner (if any)
1. <u>Rhizobium (clover plant)</u>	<u>Nitrogen fixed</u>
2. <u>green algae (Lichen)</u>	<u>Photosynthates/sugars</u>
3. <u>Dinoflagellates (Aptasia: sea anemone)</u>	<u>Photosynthates/sugars</u>
4. <u>Cyanobacteria (Azolla Fern)</u>	<u>Nitrogen fixed</u>

A. What phylum of organisms produce the items on the microscope?

Organism: Spicules from a sponge **Answer: Porifera**

B. What is their function?

Answer: Support in the waves

All of these shells are from different members of one phylum.

Organism: Mollusk shells

A. Which undergoes torsion (of its body, not necessarily of its shell) before becoming an adult? Gastropod: snail

B. Which has a relatively high intellect? Cephalopod: nautilus

C. Which can dig into the sand with its foot? Bivalve: clam

D. Which uses a radula to scrape algae off of rocks? Polyplacophoran: chiton

A. Which are the male cones of this pine?

Organism: branch of a pine tree with male and female cones

Arrows point to male cones, female cones, leaves, and new growth.

B. What is the **ploidy** of the powdery substance they produce?

Haploid (Pollen grains)

Does this organism have a coelom?

Organism: Earthworm

Answer: Yes

What was the original function of the tissue that makes up the bulk of the wood in this stump?

Carrying water (xylem tissue)

For A, B, and C, name the life stage **and** name the main **function(s)** it serves in the life of the organism.

Organism: Mealworm A. Larva B. adult C. pupa

A. Name_____ Function_____ **feeding/growth**_____

B. Name_____ Function_____ **dispersal/reproduction** _____

C. Name_____ Function_____ **metamorphosis** _____

14. A. True or False (circle one): The ancestor of plants was also an ancestor of the green-colored organism in the tank.

Organism: Caulerpa (siphonous green algae) Answer: True

B. How many cells make up each of the frond-like things you see in the tank (if it's too many to count, just say that)?

Answer: one (they are coenocytic)

15. Name two functions of the tentacles on the organism in front of you.

Organism: Sea whip (Cnidarian)

Answer: 1. capturing food/feeding 2. defense