

Essay on ex. 39 lab: arthropoda

[Health & Medicine](#), [Body](#)



1. Arthropods usually have a distinct head. How would you define a “ head”?
What are the advantages and disadvantages of such a body region?

The head is the rostral most section of an organism usually encompassing particular sensory organs such as the brain, ears and mouth among other fundamental parts of an organism.

Advantages of the head

The head of an organism allows for closer synchronization of specialized senses with the brain. That is the central point controlling the body.

The head of an organism is disposable, and the organism only lives to safeguard a single part of the body properly.

Disadvantages

It is the most critical part of an organism’s body and chopping it off leads to the death of the organism or compromises it of its critical functions.

2. Does an insect exoskeleton limit growth? Why or why not?

Yes, because exoskeleton is tough and meant for protecting the body as well as providing a surface for muscle attachment. The cover impedes growth of the organism, and in case the time reaches for the growth, the body sheds the exoskeleton off and replaces it with a larger covering in the process of ecdysis.

3. Diagram showing the muscles necessary to bend a joint with an exoskeleton versus a joint supported by an endoskeleton. Source:

[http://www2. estrellamountain. edu/faculty/farabee/BIOBK/biobookmusskel. html](http://www2.estrellamountain.edu/faculty/farabee/BIOBK/biobookmusskel.html)

4. Arthropod body segments are segments distinct, sometimes indistinct and

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sometimes fused as group to form body regions. Which group of arthropods appear the most distinctly segmented? Which appear the least segmented?

The most distinctly segmented are centipedes and the millipedes.

The least distinctly segmented are the arachnids.

5. What effect would 2.5 million spiders per acre have on the insects' community?

Provided that the spiders feed on insects, the population of insects will reduce and eventually the spiders' source of food will be depleted. The insects will go extinct. Thereafter, the spiders will also starve to death and become extinct as well.

6. Do you suspect that each eye of a spider provides the same sensory input to the brain? Why or why not?

No, because the eyes are slightly positioned at different angles, and they are immobile as well. Therefore, I feel it is reasonable to presume that each eye of the spider has a slightly different view of the organism's surrounding.

7. What activities and body functions of arthropods require the most specialized appendages?

Sensation of the surrounding, Locomotion and feeding

8. Do beetles have wings? If so where are they?

Yes, the beetles have wings. Their wings are below the wing covers.

9. What other groups of organisms have you studied thus far has chitin as part of their outer covering?

Chelicerates, crustaceans and uniramians

10. What class of arthropods dominates the sea?

Objective questions

- Describe the structures that contribute significantly to the survival of arthropods in their environments

Arthropods have a hard exoskeleton made of chitin that protects them from a harsh external environment.

The arthropods have jointed appendages that make them flexible making them active and flexible

- Describe the general morphology of organisms of phylum arthropoda

They have segmented body parts

They have an exoskeleton made of chitin

They have jointed appendages

- List characteristics that arthropods share with the phyla discussed previously

Similarities between Phylum Arthropoda and Phylum molusca

Both phyla have an open circulatory system

Similarities between phylum Arthropoda and phylum Annelida

Organisms in both Phyla have segmented body parts

- Discuss those characteristics of arthropods that were newly derived from those of their ancestral phyla

The body segmentation points to an ancestry that had bodies with many segments. Through evolution, the many segments fused and with

appendages they became specialized.

- List examples of major classes of arthropods
- Describe modifications of the exoskeleton and paired appendages of arthropods

The organisms in the phylum have a chitinous exoskeleton that protect their bodies from external risks

The hard chitin is hard and not expandable but the organisms are able to shed it off to allow for growth.

The jointed appendages help the organisms in movement by acting as levers. The organisms in phylum arthropoda are thus flexible for their activities

They have a complex nervous system that ensures quick transfer of sensory information. The organisms are thus active

References

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