

CHAPTER

22

DIRECTED READING

# Protists

## ► Section 22-1: Characteristics of Protists

### Protists Are a Varied and Ancient Group of Organisms

Mark each statement below T if it is true or F if it is false.

- \_\_\_\_\_ 1. Some protists reproduce sexually in times of environmental stress.
- \_\_\_\_\_ 2. Some protists are multicellular.
- \_\_\_\_\_ 3. Some protists reproduce by forming embryos.
- \_\_\_\_\_ 4. Heterotrophic protists are known as protozoa.
- \_\_\_\_\_ 5. Some protists can reproduce by mitosis.
- \_\_\_\_\_ 6. Protists have complex flagella and cilia.
- \_\_\_\_\_ 7. Some protists are parasites.
- \_\_\_\_\_ 8. Some protists live in damp soil.

### Protists Reproduce Sexually and Asexually

Read each question, and write your answer in the space provided.

9. How is the zoospore of the unicellular green alga *Chlamydomonas* formed?

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10. How is the zygospore of *Chlamydomonas* formed?

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Mark each statement below T if it is true or F if it is false.

- \_\_\_\_\_ 11. Alternation of generations means that sexual reproduction is followed by asexual reproduction.
- \_\_\_\_\_ 12. Alternation of generations has two distinct multicellular phases: the sporophyte generation and the gametophyte generation.
- \_\_\_\_\_ 13. Conjugation is the temporary union of two protists to exchange nuclear material.

## ► Section 22-2: Protist Diversity

### Protists Can Move by Using Cytoplasmic Extensions

Read each question, and write your answer in the space provided.

1. How do amoebas move around?

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2. How are forams different from amoebas?

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### Diatoms Have Double Shells

Complete each statement by underlining the correct term or phrase in the brackets.

3. The shells of diatoms are made of [silica / calcium carbonate].  
4. Diatoms move by secreting chemicals through holes in their shells and [tumbling / gliding].  
5. Diatoms have [radial / radial and bilateral] symmetry.  
6. During reproduction the two shells of the diatom [separate / dissolve].

### Many Algae Are Multicellular

In the space provided, write the letter of the description that best matches the term or phrase.

- |                       |                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------|
| _____ 7. algae        | a. multicellular; found in marine environments; kelp                                                    |
| _____ 8. green algae  | b. protists that are always phototrophs                                                                 |
| _____ 9. red algae    | c. freshwater unicellular organisms; marine plankton; inhabit damp soil                                 |
| _____ 10. brown algae | d. multicellular; found in warm ocean environments; good at absorbing light that penetrates deep waters |

### Some Protists Move with Flagella

In the space provided, write which phylum—dinoflagellates, zoomastigotes, or euglenoids—is being described below.

- \_\_\_\_\_ 11. some live in guts of termites where they digest wood; others cause African sleeping sickness
- \_\_\_\_\_ 12. responsible for poisonous "red tides"
- \_\_\_\_\_ 13. freshwater protists with two flagella; eyespots; some have chloroplasts; some ingest food; can change shape

## Ciliates Are Complex Protists That Use Cilia to Swim

Read each question, and write your answer in the space provided.

14. How do most ciliates reproduce?

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15. What are some of the characteristics of *Paramecium caudatum*?

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## Protistan Molds Are Not Fungi

Complete each statement by writing the correct term or phrase in the space provided.

16. During environmental stress, cellular slime molds form multicellular colonies called \_\_\_\_\_.

17. \_\_\_\_\_ slime molds contain many nuclei but are not separated by nuclei.

18. \_\_\_\_\_ either are parasites or feed on dead organic matter.

## Some Protists Form Resistant Stages

Read each question, and write your answer in the space provided.

19. Which sporozoan causes malaria? What are its hosts?

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20. How are diseases caused by sporozoans transmitted?

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## ► Section 22-3: Protists and Health

### How Do Protists Affect Humans?

*Read each question, and write your answer in the space provided.*

1. How do protists harm humans?

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2. How do protists help humans?

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### Malaria Is Caused by Several Species of *Plasmodium*

*Study the following steps in the life cycle of the protist that causes malaria. Determine the order in which the steps take place. Write the number of each step in the space provided.*

- \_\_\_\_\_ 3. An infected mosquito bites a human to get blood and injects saliva, which contains sporozoites.
- \_\_\_\_\_ 4. An uninfected mosquito bites a human to get blood.
- \_\_\_\_\_ 5. After 48 hours, the merozoites erupt and release merozoites and toxins.
- \_\_\_\_\_ 6. The merozoites infect red blood cells and divide rapidly.
- \_\_\_\_\_ 7. The sporozoites produce merozoites.
- \_\_\_\_\_ 8. Some of the merozoites in the blood develop into gametes.
- \_\_\_\_\_ 9. The sporozoites infect the liver, where they divide rapidly.

*Complete each statement by underlining the correct term or phrase in the brackets.*

10. Malaria is treated with [quinine / antibiotics].
11. Malaria can be controlled by reducing [malnutrition / mosquito populations].