Multiple Choice Identify the letter of the choice that best completes the statement or answers the question. 1. What is the primary ecological role of prokaryotes? A parasitizing eukaryotes, thus causing diseases B breaking down organic matter (dead organisms and waste) C metabolizing materials in extreme environments	
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 adding methane to the atmosphere serving as primary producers in terrestrial environments 	
Choose the nutritional mode that is primarily employed by each of the protists listed below. A. autotrophic B. mixotrophic C. heterotrophic (by absorption) D. heterotrophic (by ingestion)	
2. diatoms	
3. phagocytic euglenids that possess functional chloroplasts A A B B C C D D E E	
4. Which of the following do not need a digestive system? (A) heterotrophs (B) autotrophs (C) herbivores (D) omnivores (E) carnivores	
 5. To leave the digestive tract, a substance must cross a cell membrane. During which stage of food prodoes this take place? (A) ingestion (B) digestion (C) photosynthesis (D) absorption (E) elimination 	ocessing

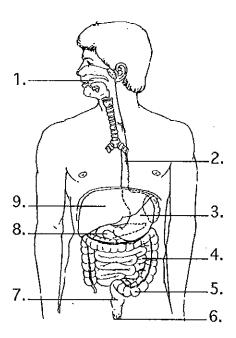
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	6.	What mode of feeding is incorrectly paired with its organism? (a) Bulk Feeder-Tiger (b) Suspension Feeder- Basking Shark	
		© Substrate Feeder- Human	
		Bulk Feeder- Rattlesnake	
		© Fluid Feeder- Mosquito	
<u>.</u>	7.	If there were no mycorrhizae, then which of the following would be true?	
		A There would be fewer infectious diseases.	
		We wouldn't have any antibiotics.	
		© There would be no mushrooms for pizza.	
		Most plants would be stunted in their growth.	
		Cheeses like blue cheese or Roquefort would not exist.	
		Match the numbered terms below to the following descriptions. Choose all appropriate terms, but	only
		appropriate terms. 1. autotroph	
		2. heterotroph	
		3. phototroph	
		4. chemotroph	
	8.	a prokaryote that obtains both energy and carbon as it decomposes dead organisms	
		(A) 1 only	
		® 3 only	
		© 1 and 3	
		① 2 and 4	
		(B) 1, 3, and 4	
	9.	an organism that obtains its energy directly from chemicals	•
		(A) 1 only	
		® 2 only	
		© 3 only	
		① 4 only ② 1 and 4	
	10.	The symbiotic relationships involving roots and soil fungi are considered parasitic.	
		B mutualistic.	
		© commensal.	
		harmful to the plant partner.	
		the beginning stages of the formation of lichens.	
	11.	All of the following are adaptations to an herbivorous diet except	
		broad, flat molars (teeth).	
		(B) a rumen.	
		© elongated cecum. D bile salts to digest fats:	
		mutualistic relationships with bacteria or protists.	
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	12.	Which of the following digestive processes requires enzymes? (a) ingestion (b) peristalsis (c) absorption (d) hydrolysis (digestion) (e) elimination
	13.	Most enzymatic hydrolysis (digestion) of the macromolecules in food occurs in the small intestine. large intestine. stomach. liver. mouth.
	14.	You are weeding your garden when you accidentally expose some roots. You notice swellings (root nodules on the roots. Most likely your plant (A) suffers from a mineral deficiency. (B) is infected with a parasite. (C) is benefiting from a mutualistic bacterium. (D) is developing offshoots from the root. (E) suffers from a vitamin deficiency.
	15.	Dwarf mistletoe grows on many pine trees in the Rockies. Although the mistletoe is green, it is probably not sufficiently active in photosynthesis to produce all the sugar it needs. The mistletoe also produces haustoria that extract sugars from the tree. Thus, dwarf mistletoe growing on pine trees is best classified as an epiphyte. a nitrogen-fixing legume. a carnivorous plant. a mutualistic plant. a parasite.
_	16.	Which of the following vitamins is incorrectly associated with its use? ② vitamin C—synthesis of connective tissue ③ vitamin A—incorporated into the visual pigment of the eye ③ vitamin D—calcium absorption and bone formation ③ vitamin E—protection of membrane phospholipids from oxidation © vitamin K—production of nerve cells
, m	17.	What are the three main elements on which plant growth and development depend? (A) nitrogen; carbon; oxygen (B) potassium; carbon; oxygen (C) oxygen; carbon; hydrogen (D) phosphorus; nitrogen; oxygen (E) sulfur; nitrogen; phosphorus

The following questions refer to the digestive system structures in the figure below.



- 18. Where are the agents produced that help emulsify fat produced?
 - A 1
 - B 2
 - © 3
 - **(b)** 8
 - (E) 9
- 19. The bulk of a plant's dry weight is derived from
 - (A) soil minerals and ions.
 - B CO₂.
 - © the hydrogen from H₂O.
 - the oxygen from H₂O.
 - (E) the uptake of organic nutrients (dead organisms) from the soil.
- 20. If all the bacteria on Earth suddenly disappeared, which of the following would be the most likely and most direct result?
 - (A) The number of organisms on Earth would increase by 10-20%.
 - B Human populations would thrive in the absence of disease.
 - There would be little change in Earth's ecosystems.
 - The recycling of nutrients would be greatly reduced, at least initially.
 - (E) There would be no more pathogens on Earth.

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	21.	 Why is nitrogen fixation such an important process? Nitrogen fixation can only be done by certain prokaryotes. Nitrogen in its gaseous state is unavailable to the vast majority of living organisms. Nitrogen fixation is very expensive in terms of metabolic energy. Nitrogen fixers are sometimes symbiotic with fungi. Nitrogen-fixing capacity can only be genetically engineered.
	22.	Intracellular digestion is usually immediately preceded by which process? A exocytosis B phagocytosis c absorption D elimination E secretion
	23.	Most nutrients are absorbed across the epithelium (lining) of the
	24.	What makes certain red algae appear red? (A) They live in warm coastal waters. (B) They possess pigments that reflect red light. (C) They absorb red light for photosynthesis. (D) They lack chlorophyll. (E) They live in contaminanted waters.
	25.	Lichens are symbiotic associations of fungi and (A) mosses. (B) cyanobacteria. (C) green algae. (D) either A or B (E) either B or C
	26.	Which of the following statements about bile salts is true? Bile salts
		 are enzymes. are manufactured by the pancreas. emulsify (breakdown) fats in the duodenum (small intestine). increase the efficiency of protein digestion in the stomach. are normally an ingredient of stomach acid.
	27.	What part(s) of the digestive system have secretions with a pH of 2? A small intestine B stomach pancreas A and B only A, B, and C

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digestion are used to supplement the plant's supply of

A energy.

(B) carbohydrates.(C) sugars and fats.(D) minerals.(E) water.

	33.	A biologist discovers an alga that is marine, multicellular, and lives at a depth reached only by blue light. This alga probably belongs to which group? (A) red algae (B) blue/green algae
Of		© green algae © golden algae © impossible all blue light is immediately reflected in the first few inches of water
	34.	 Which of the following is an advantage of a complete digestive system over a gastrovascular cavity? Extracellular digestion is not needed. Specialized regions and multitasking are possible. Digestive enzymes do not work in the gastrovascular cavity. Extensive branching is possible. Intracellular digestion is easier.
		Use the list below of types of bacterial metabolism to answer the following questions. Pick the term that best matches the statement. Responses may be used once, more than once, or not at all. A. photoautotrophs B. photoheterotrophs C. chemoautotrophs D. chemoheterotrophs that perform decomposition E. parasitic chemoheterotrophs
	35.	use light energy to synthesize organic compounds from CO ₂ A B B C C D D E E
	36.	responsible for many human diseases A B B C C D D E E
	37.	cyanobacteria, the organism that likely generated much of our atmosphere's oxygen early in earths history A B B C C D E E

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38.	A certain unicellular eukaryote has a siliceous (glasslike) shell and autotrophic nutrition. To which groudoes it belong? (A) dinoflagellate (B) diatom (C) amoeba (D) red algae (E) paramecium
39.	In general, herbivorous mammals have molars modified for (A) cutting. (B) ripping. (C) grinding. (D) splitting. (E) piercing.
40.	Increasing the surface area facilitates which of the following digestive processes in humans? (A) hydrolysis (digestion) (B) absorption (C) elimination of feces (D) A and B only (B) A, B, and C
41.	Nitrogen fixation is a process that A convertss nitrogen compounds from dead and decaying materials into nitrogen gas. B converts ammonia to nitrate. C releases nitrate from the rock substrate. D converts nitrogen gas into ammonia. B none of the above
42.	Which of the following is <i>not</i> one of the four classes of essential nutrients in animals? (a) essential sugars (b) essential amino acids (c) essential fatty acids (d) essential vitamins (e) essential minerals
43.	Which of these animals has a gastrovascular cavity? (A) pigeon (B) hydra (C) elephant (D) beetle (E) leech (worm-like)

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44	 How are the vascular plants that are involved in mycorrhizae and the photosynthetic cells that are involved in lichens alike? They provide organic nutrients (sugars) to fungal partners. They secrete acids that keep the fungal partner from growing too quickly. They parasitize the fungi. They are digested by fungal exoenzymes while still alive. They provide minerals and water to the fungi.
45.	Because they accumulate in the body, excess ingestion of which of the following can have toxic effects? (A) fat-soluble vitamins (B) water-soluble vitamins (C) calcium and phosphorus (D) proteins (E) sugars
46.	Hyphae form a covering over roots. Altogether, these hyphae create a large surface area that helps to do which of the following? (A) aid in absorbing minerals and ions (B) maintain cell shape (C) increase photosynthesis (D) anchor a plant (E) protect the roots from ultraviolet light
47.	 Why are cattle able to survive on a diet consisting almost entirely of plant material? They are autotrophic. Cattle, like the rabbit, reingests its feces. They manufacture all 15 amino acids out of sugars in the liver. Cattle saliva has enzymes capable of digesting cellulose. They have cellulose-digesting, symbiotic microorganisms in chambers of their stomachs.
48.	Why do organisms "need to feed"? (A) to acquire chemical energy to do cellular work (B) to acquire building blocks for growth and repair (C) to acquire essential elements, which are needed involved in various cellular activities (D) two of the above are correct (E) A, B and C are all correct
49.	Which molecule or class of molecules can be thought of as "cellular gasoline"? (a) carbohydrates (b) sugars (c) ATP (d) DNA (e) proteins

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- 50. The following conditions are all caused by a fungus except
 - (A) AIDS.
 - B athlete's foot.
 - © ringworm.
 - © candidiasis (Candida yeast infection).
 - (E) chestnut blight.

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