Bio-10-Q2W7,8-Qs.Bank-Plants

Modified True/False

Indicate whether the statement is true or false. If false, change the identified word or phrase to make the statement true.





Figure 21-2

- 11. Where does the sexual reproductive cycle begin in Figure 21-2?
 - a. А c. C b. B d. D
- 12. Where does the asexual reproductive cycle begin in Figure 21-2?
 - Α a.
 - b. B
 - 13. Where are seeds developed in Figure 21-2?
 - А c. С a. b. B D d.
 - 14. If the plant described in Figure 21-2 has 16 chromosomes in the gametophyte stage, how many chromosomes does it have in the sporophyte stage?

С

c. d. D

4 a. b.

8

c. 16 d. 32

Figure 21-3

- 15. Refer to Figure 21-3. Removing which structure would cause this plant to fall over? c. C a. A b. B d. D
- 16. Refer to Figure 21-3. Which structure is used for the transportation of nutrients? А c. C a.
 - b. B d. D
- 17. Refer to Figure 21-3. Removing which structure would cause this plant to starve?
 - a. А c. С
 - В d. D b.
 - 18. Refer to Figure 21-3. Which structure collects water? c. C
 - a. Α b.
 - В d. D



Figure 21-4

19.	Which structure in Figure 21-4 is analogou	s to a human fetus?
	a. A	c. C
	b. B	d. D
20.	Which structure in Figure 21-4 is analogou	s to a yolk in a chicken egg?
	a. A	c. C
	b. B	d. D
21.	Which structure in Figure 21-4 is analogou	s to an egg's shell?
	a. A	c. C
	b. B	d. D
22.	Which division of seed plants is represente	d by only one living species?
	a. Cycadophyta	c. Ginkgophyta
22		
23.	Fossil and genetic evidence suggests that _	were the first land plants.
	a. mosses b liverworts	d horsetail
24	Druphytos and Uppeterphytos tond to be fo	u. horsetan
24.	a they rely on osmosis and diffusion for	transport of putrients
	b they contain vascular tissue	inansport of nutrients
	c. they are both small plants	
	d. they don't produce seeds	
25.	The fronds of ferns are divided into leaflets	called
	a. rhizomes	c. cycads
	b. pinnae	d. sori
26.	Which of these are vascular plants?	
	a. club mosses	c. ferns
	b. spike mosses	d. all of these
27.	In most seed plants, fertilization does not re-	equire
	a. a film of water to carry the sperm to th	e egg
	b. alternation of generations	
	c. the production of eggs	
20	u. a gametophyte generation	n in mhich the constants to stars is
28.	Nonvascular plants is the only plant divisio	on in which the gametophyte stage is
	b dependent upon the sporophyte	d composed of 2n cells
29	The female reproductive structure of nonva	a: composed of 2n cons
2).	a. antheridia	c. rhizoid
	b. archegonia	d. pinnae
30.	Anthophytes that live for only one year or	less are called .
	a. annuals	c. perennials
	b. biennials	d. dicots
31.	Horsetails are	
	a. bryophytes	c. lycophytes
	b. arthrophytes	d. pterophytes
32.	Which of the following is not a dicotyledor	1?
	a. lettuce	c. grass
	b. maple tree	d. dandelion
33.	An anthophyte differs from a conifer in that	t
	a. it is deciduous	c. its seeds are enclosed in a fruit
	b. it produces seeds	d. it has vascular tissue



Figure 22-2

 34.	Which of the plants shown in Fi	gure 22-2 uses alte	rnation of generations to reproduce?
	a. A	с.	С
	b. B	d.	all of them
 35.	Which of the plants shown in Fi	gure 22-2 uses seed	ls to reproduce?
	a. A	с.	C
	b. B	d.	all of them
 36.	Which reproductive process is N	NOT used by all thr	ee of the plants shown in Figure 22-2?
	a. sexual	с.	gametophyte
	b. asexual	d.	fruit generation
 37.	Which of the plants shown in Fi	gure 22-2 does NO	T contain vascular tissue?
	a. A	с.	С
	b. B	d.	none of them contains vascular tissue
 38.	Which of the plants shown in Fi	gure 22-2 has a do	ninant gametophyte generation?
	a. A	с.	C
	b. B	d.	all of them
	A B		C
	ÎĪ		
	↓ ↓		
	Precambrian Paleozoic Era	Mesozoic Era	Cenozoic Era
	Fig	$\frac{1}{2}$	
	I Ig	jui (22-5	

- _____ 39. What originated at point A on the timeline shown in Figure 22-3?
 - a. nonvascular plants c. seed plants
 - b. vascular plants d. non-seed vascular plants
- 40. What type of plant died out in the time marked B in the timeline shown in Figure 22-3?
 - a. nonvascular plants c. seed plants
 - b. vascular plants d. non-seed vascular plants
- 41. What type of plant is completely extinct at point C in the timeline shown in Figure 22-3? a. nonvascular plants c. conifers
 - a. nonvascular plantsb. vascular plantsd.
 - d. none of the above



Figure 22-4

- 42. Where are the male gametophytes produced in Figure 22-4?
 - a. A c. C d. D
 - b. B
- 43. Where is the structure shown in Figure 22-4 located?
 - a. in the leaves in the ground c.
 - b. in the stalk

d. in the root



Figure 22-5

- 44. How are the vascular tissues bundled in the stalks of the seed shown to the left in Figure 22-5?
 - a. scattered c. net-like
 - b. in a ring d. they do not exist
- 45. You pick a flower off the plant that produced the seed shown to the right in Figure 22-5. What is a possible number of petals this flower could have? 7 c.
 - 3 a.
 - b. 6 d. 8
- 46. If you cut open a stalk of the plant that produced the seed shown to the right in Figure 22-5, how would the vascular bundles appear? a. scattered
 - c. net-like

b. in a ring

- d. they do not exist



Figure 22-6

47. According to Figure 22-6, with which division of seed plants do ginkos share the most recent common ancestor?

a. conifers

b. anthophytes

b. anthophytes

- c. gnetumsd. cycads
- 48. According to Figure 22-6, which species was the fastest to differentiate from the rest of the ones shown?
 - a. conifers and ginkos

- c. gnetums and cycads
- d. anthophytes, conifers, and ginkos
- 49. What can be inferred from Figure 22-6?
 - a. anthophytes are the most common seed plants
 - b. ginkos only grow in one area of the world
 - c. there used to be more than one species of ginkos
 - d. seed plants are more closely related to protists than non-seed plants

Completion

Complete each statement.

- 50. Most photosynthesis occurs in the ______ of the plant.
- 51. The waxy, waterproof covering found on the plant stems and leaves is called the ______
- 52. The alternating stages of a plant's life cycle are the _________stage and the _______stage.
- 53. A plant with needlelike or scaly leaves that produces seeds in cones would most likely belong to the ______ division.
- 54. Some plants such as radishes and sweet potatoes store starch reserves in their ______.
- 55. Nonvascular plants have to rely on ______ and _____ for transport of their water and nutrients.
- 56. ______ are small bryophytes with leafy stems that usually grow in dense carpets or tufts.
- 57. Nonvascular plants must have adaptations to keep them from ______.
- 58. The earliest known plant fossils are called ______.
- 59. One billion years ago the ______ found in inland seas and oceans were the ancestors of modern plants.

Matching

Match each item with the correct statement below.

- a. root
- b. leaf
- c. stem
- 60. broad, flat organ of a plant that traps light energy for photosynthesis
- 61. protective, waxy layer covering most fruit, leaves, and stems
- 62. structure that contains an embryo along with a food supply and is covered by a protective coat
- 63. provides structural support for upright growth
- 64. contains tissues of tubelike, elongated cells through which water and food are transported
- 65. a plant organ that absorbs water and minerals from the soil

Match each item with the correct statement below.

- a. ovule f. pollen grain b. cotyledon g. embryo c. sorus
- d. cones i.
- e. frond
- 66. structure that includes sperm cells, nutrients, and a protective outer covering
- 67. structure in which the female gametophyte develops
- 68. vascular plant that produces seeds that are not protected by a fruit
- 69. food-storage organ of a plant embryo
- 70. thick, underground stem
- 71. organism at an early stage of development
- 72. early gametophyte in lycophytes, sphenophytes, and pterophytes
- 73. woody strobili that contain seeds
- 74. leaf of a fern
- 75. cluster of sporangia

Short Answer

- 76. What structural feature of bryophytes limits their size? Explain why this limits their size.
- 77. What characteristics are common among all plants?
- 78. How does the cuticle prevent water loss?

In an effort to understand alternation of generations in bryophytes, experimenters have tried in the laboratory to develop moss sporophytes from gametophytes without fertilization. When haploid gametophyte protonemata (pl. of *protonema*) were cultivated in a sugar-free medium, only gametophytes were produced. However, when botanists transferred protonemata to a medium supplemented with two percent sucrose, the protonemata produced a large number of sporophyte sporangia.

- 79. Formulate a hypothesis to explain why a medium with two percent sucrose causes this change in the reproductive cycle.
- 80. Explain how you would distinguish between mosses and ferns.
- 81. What advantages does a tree that is every even have?
- 82. How does Figure 22-1 show that these conifers grow according to their own growth pattern?

- d. cuticle
- e. vascular plant
- f. seed

- h. gymnosperm
- prothallus
- j. rhizome



Bracken ferns are one of the most widely distributed species of ferns. Brackens occur in all but hot and cold desert regions of the world. In many regions, this species invades the grasslands, where it becomes a troublesome weed that is difficult to eradicate because of its persistent underground rhizome. The problem is worsened because bracken is a poisonous plant. It causes thyamine deficiency, which results in the death of certain animals.

- 83. If you found that when bracken spores grew into ferns, the other plant in the pot flourished, what might you conclude?
- 84. If you wanted to test the growth patterns of brackens with other plants, what would be the control in the experiment?
- 85. What would be the variable in the experiment?

Bio-10-Q2W7,8-Qs.Bank-Plants Answer Section

NAT: F3 | F4 | F6

NAT: F3 | F4 | F6

NAT: C5 | F3 | F4

12. ANS: C

MODIFIED TRUE/FALSE

1.	ANS:	F, gametophyte						
2.	PTS: ANS:	1 F, Nonvascula	DIF: r	В	OBJ:	21-3	NAT:	F3 F4 F6
3.	PTS: ANS:	1 T	DIF:	B C5 E2 E4	OBJ: PTS:	21-2 1	NAT: DIF:	C5 F3 F4 B
4.	ANS:	F, a film of wa	nai: nter	C3 F3 F4				
	PTS:	1	DIF:	В	OBJ:	21-3	NAT:	F3 F4 F6
MULTIPL	E CHO	DICE						
5.	ANS: NAT:	A C5 C6 F3	PTS:	1	DIF:	В	OBJ:	21-1
6.	ANS: NAT:	B C5 C6 F3	PTS:	1	DIF:	В	OBJ:	21-1
7.	ANS: NAT:	D C5 E2 F1	PTS:	1	DIF:	В	OBJ:	21-5
8.	ANS: NAT:	C F3 F4 F6	PTS:	1	DIF:	В	OBJ:	21-3
9.	ANS: NAT:	C C5 E2 F1	PTS:	1	DIF:	В	OBJ:	21-5
10.	ANS: NAT:	A C5 E2 F1	PTS:	1	DIF:	В	OBJ:	21-5
11.	ANS:	D	PTS:	1	DIF:	В	OBJ:	21-3

DIF: B

OBJ: 21-3

OBJ: 21-3

OBJ: 21-3

OBJ: 21-2

OBJ: 21-2

OBJ: 21-2

OBJ: 21-2

13. ANS: C PTS: 1 DIF: A NAT: F3 | F4 | F6 14. ANS: C PTS: 1 DIF: A NAT: F3 | F4 | F6 PTS: 1 DIF: A 15. ANS: D NAT: C5 | F3 | F4 16. ANS: B PTS: 1 DIF: A NAT: C5 | F3 | F4 17. ANS: A PTS: 1 DIF: A NAT: C5 | F3 | F4 PTS: 1 DIF: A 18. ANS: D

PTS: 1

19.	ANS: C	PTS:	1	DIF:	А	OBJ:	21-2
20.	ANS: A	PTS:	1	DIF:	А	OBJ:	21-2
	NAT: C5 F3 F4						
21.	ANS: B	PTS:	1	DIF:	А	OBJ:	21-2
22	$\begin{array}{c} \text{NAL: } C_3 \mid \Gamma_3 \mid \Gamma_4 \\ \text{ANS: } C \end{array}$	DTC.	1	DIE.	р	ODI	22.5
22.	NAT: C1 C3 C5	P15:	1	DIF:	В	ORI:	22-5
23.	ANS: B	PTS:	1	DIF:	В	OBJ:	22-2
	NAT: C1 C5 G1						
24.	ANS: A NAT: $C1 \mid C3 \mid C5$	PTS:	1	DIF:	В	OBJ:	22-3
25	NAL. $CI CJ CJ$		1	DIE.	D	ODI	22.4
23.	$ \begin{array}{c} \text{ANS. } \mathbf{D} \\ \text{NAT: } \mathbf{C1} \mid \mathbf{C3} \mid \mathbf{C5} \\ \end{array} $	F15.	1	DII'.	D	ODJ.	22-4
26		ΡΤ ς.	1	DIE	В	OBI	22 1
20.	NAT: $C1 C3 C5$	115.	1	DII'.	Ъ	ODJ.	22-4
27	ANS: A	PTS ∙	1	DIF∙	В	OBI-	22-5
27.	NAT: C1 C3 C5	115.	1	211.	D	020	22 0
28.	ANS: C	PTS:	1	DIF:	В	OBJ:	22-4
	NAT: C1 C3 C5						
29.	ANS: B	PTS:	1	DIF:	В	OBJ:	22-1
	NAT: C1 C5 G1						
30.	ANS: A	PTS:	1	DIF:	В	OBJ:	22-2
	NAT: C1 C5 G1						
31.	ANS: B	PTS:	1	DIF:	В	OBJ:	22-4
	NAT: C1 C3 C5						
32.	ANS: C	PTS:	1	DIF:	В	OBJ:	22-5
	NAT: C1 C3 C5						
33.	ANS: C	PTS:	1	DIF:	В	OBJ:	22-5
	NAT: C1 C3 C5				_		
34.	ANS: D	PTS:	1	DIF:	В	OBJ:	22-2
25	NAT: CI C5 GI	DTG	1	DIE	D	ODI	<u> </u>
35.	ANS: A	PTS:	1	DIF:	В	OBJ:	22-2
26	$\begin{array}{c} \text{NAL: } CI \mid CJ \mid UI \\ \text{ANC: } D \end{array}$		1	DIE.	٨	ODI	<u></u> 1
50.	ANS. D NAT: $C1 C3 C5$	F15.	1	DIF.	A	ODJ.	22-4
37	$\begin{array}{c} \text{NAL} CI CJ CJ \\ \text{ANS} \\ \text{B} \end{array}$	ΡΤ ς.	1	DIE	٨	OBI	<u></u>
57.	NAT: $C1 C5 G1$	115.	1	$D\Pi^{*}$.	A	ODJ.	<i>LL</i> - <i>L</i>
38	ANS: C	PTS.	1	DIE	А	OBI-	22-2
50.	NAT: $C1 C5 G1$	115.	1	DII.	7 x	ODJ.	
39.	ANS: A	PTS:	1	DIF:	А	OBJ:	22-2
07.	NAT: C1 C5 G1	1101	-	2		020	
40.	ANS: D	PTS:	1	DIF:	А	OBJ:	22-4
	NAT: C1 C3 C5						
41.	ANS: D	PTS:	1	DIF:	А	OBJ:	22-3
	NAT: C1 C3 C5						
42.	ANS: B	PTS:	1	DIF:	В	OBJ:	22-4
	NAT: C1 C3 C5						
43.	ANS: C	PTS:	1	DIF:	В	OBJ:	22-4

		NAT:	C1 C3 C5						
4	14.	ANS:	A	PTS:	1	DIF:	В	OBJ:	22-5
		NAT:	C1 C3 C5						
4	45.	ANS:	D	PTS:	1	DIF:	А	OBJ:	22-5
	16	NAI:	CI C3 C5	ΡΤ ς.	1	DIE	^	OBI	22.5
4	+0.	NAT:	C1 C3 C5	F15.	1	$D\Pi^{*}$.	A	ODJ.	22-3
4	47.	ANS:	A	PTS:	1	DIF:	А	OBJ:	22-5
		NAT:	C1 C3 C5						
4	48.	ANS:	C	PTS:	1	DIF:	А	OBJ:	22-5
	10	NAT:	C1 C3 C5	DTC.	1	DIE	•	ODI	22.5
4	+9.	NAT:	C	P15:	1	DIF:	A	ODJ:	22-3
COMP	LET	ION							
com									
5	50.	ANS:	leaves						
		DTC.	1	DIE.	D	ODI.	21.2	NAT.	$C5 \mid E2 \mid E4$
5	51	ANS.	1 cuticle	DIF:	D	ODJ:	21-2	NAI:	C3 F3 F4
	, 11	71110.	eutiele						
		PTS:	1	DIF:	В	OBJ:	21-2	NAT:	C5 F3 F4
5	52.	ANS:	gametophyte,	sporopł	nyte				
		ρτς.	1	DIE	в	OBI	21-3	ΝΔΤ·	F3 F4 F6
5	53.	ANS:	Coniferophyta	DII.	D	ODJ.	21-5	11111.	15 14 10
_			r y						
		PTS:	1	DIF:	В	OBJ:	21-5	NAT:	C5 E2 F1
5	54.	ANS:	roots						
		PTS∙	1	DIF	В	OBI [,]	21-2	NAT·	C5 F3 F4
5	55.	ANS:	osmosis, diffus	sion	-	020			00 110 11
~		PTS:	1	DIF:	В	OBJ:	21-4	NAT:	C4 C6 E2
2	0 0.	ANS:	Mosses						
		PTS:	1	DIF:	В	OBJ:	21-5	NAT:	C5 E2 F1
5	57.	ANS:	drying out						
		DEC		DIE	-	0.5.4			
5	-0	PTS:]	DIF:	В	OBJ:	21-2	NAT:	C5 F3 F4
2	58.	ANS:	psilopnytes						
		PTS:	1	DIF:	В	OBJ:	21-2	NAT:	C5 F3 F4
5	59.	ANS:	algae						
		DTC	1	DIE	D	ODI	21.2	NT 4 77	
		PTS:	1	DIF:	В	OBI:	21-2	NAT:	C5 F3 F4

MATCHING

60.	ANS: B NAT: C5 C6 F3	PTS:	1	DIF:	В	OBJ:	21-1
61.	ANS: D NAT: C5 C6 F3	PTS:	1	DIF:	В	OBJ:	21-1
62.	ANS: F NAT: C5 C6 F3	PTS:	1	DIF:	В	OBJ:	21-1
63.	ANS: C NAT: C5 C6 F3	PTS:	1	DIF:	В	OBJ:	21-1
64.	ANS: E NAT: $C5 C6 F3$	PTS:	1	DIF:	В	OBJ:	21-1
65.	ANS: A NAT: C5 C6 F3	PTS:	1	DIF:	В	OBJ:	21-1
66.	ANS: F	PTS:	1	DIF:	В	OBJ:	22-5
67.	ANS: A	PTS:	1	DIF:	В	OBJ:	22-5
	NAT: C1 C3 C5						
68.	ANS: H NAT: C1 C3 C5	PTS:	1	DIF:	В	OBJ:	22-5
69.	ANS: B	PTS:	1	DIF:	В	OBJ:	22-5
70	NAT: $CT CS CS$	ρτς.	1	DIE	в	OBI	22-4
70.	NAT: C1 C3 C5	115.	1	DII.	Ъ	ODJ.	22-4
71.	ANS: G	PTS:	1	DIF:	В	OBJ:	22-5
70	NAT: $C1 C3 C5$	DTC	1	DIE	D	ODI	22.4
12.	ANS: I NAT: $C1 \mid C2 \mid C5$	P15:	1	DIF:	В	OBI:	22-4
73	ANS: D	PTS ·	1	DIF	B	OBI [,]	22-5
75.	NAT: C1 C3 C5	115.	1	DII.	D	ODJ.	22 3
74.	ANS: E	PTS:	1	DIF:	В	OBJ:	22-4
	NAT: C1 C3 C5						
75.	ANS: C	PTS:	1	DIF:	В	OBJ:	22-4
	NAT: C1 C3 C5						

SHORT ANSWER

76. ANS:

Lack of vascular tissue limits the size of bryophytes. Vascular tissue conducts food and water to the plant parts. The lack of ability to conduct needed materials efficiently prevents bryophytes from growing large.

PTS: 1 DIF: A OBJ: 21-5 NAT: C5 | E2 | F1

77. ANS:

Plants are multicellular eukaryotes that produce their own food in the form of glucose. Plants cells have a cell wall and the leaves and stems of plants have a cuticle.

PTS: 1	DIF: B	OBJ: 21-1	NAT: C5 C6 F3

78. ANS:

	The waxy cuticle is a lipid, and water does not dissolve in lipids. So, the cuticle helps prevent the water in plant tissues from evaporating into the atmosphere.								
79.	PTS: 1 ANS:	DIF:	А	OBJ:	21-2	NAT: C5 F3 F4			
	Answers will vary. S changes that double i	Answers will vary. Students may suggest that the sucrose somehow causes a normal haploid cell to undergo changes that double its chromosome number and make it ready to produce sporophytes.							
80.	PTS: 1 ANS:	DIF:	А	OBJ:	21-3	NAT: F3 F4 F6			
	Ferns have vascular t	tissue a	nd mosses don't	. Ferns	tend to grow la	arger than mosses.			
81	PTS: 1 ANS [.]	DIF:	В	OBJ:	22-4	NAT: C1 C3 C5			
	Because an evergreen temperature warms. T are scarce. Furthermo instead of building up	Because an evergreen tree never loses its leaves, it can begin photosynthesis in the early spring, as soon as the temperature warms. This gives the tree a head start on growth. Also, an evergreen can grow where nutrients are scarce. Furthermore, its branches and needles are extremely flexible and allow snow and ice to slide off, instead of building up and breaking the branches.							
00	PTS: 1	DIF:	А	OBJ:	22-5	NAT: C1 C3 C5			
82.	ANS: Each conifer reached its maximum height at a different age, and each reached a different maximum height. Each line displays a different pattern of growth.								
02	PTS: 1	DIF:	А	OBJ:	22-5	NAT: C1 C3 C5			
83.	ANS: You might think that	the fer	n had a benefic	ial effe	ct on the growt	h of the plant.			
0.4	PTS: 1	DIF:	А	OBJ:	22-4	NAT: C1 C3 C5			
84.	ANS: The control will be growing the spores in a pot with no other plants.								
05	PTS: 1	DIF:	А	OBJ:	22-4	NAT: C1 C3 C5			
03.	ANS: The variable will be the factor students are testing for. For example, if they were testing to see which plants will allow the growth of bracken spores, they would plant the spores in the same pot with one other plant. They would also most likely choose to grow bracken spores in the same pot with a bracken colony.								
	PTS: 1	DIF:	А	OBJ:	22-4	NAT: C1 C3 C5			