Q1W6-Biology 10- Qs Bank-Cyto-Cell Cycle

Multiple Choice

Identify the choice that best completes the statement or answers the question.

 1.	You are conducting osmosis experiments with a table salt to the test tube. According to the princ cells?	tes tiple	at tube of human cells in solution. You add a teaspoon of es of osmosis, what can you predict will happen to the
	a. They will swell and burst.	c.	They will shrink and shrivel.
	b. They will not be affected.	d.	They will undergo rapid mitosis.
 2.	You are conducting osmosis experiments with a table salt to the test tube. According to the princ	tes tiple	at tube of human cells in solution. You add a teaspoon of es of osmosis, the cells will shrink and shrivel.
	The solution above is —		
	a. hypertonic.	c.	hypotonic.
	b. isotonic.	d.	passive.
 3.	Which of the following is true of facilitated diff	usio	on?
	a. It occurs with a concentration gradient and r	requ	aires transport proteins.
	b. It occurs against a concentration gradient an	nd re	equires transport proteins.
	c. It occurs with a concentration gradient and d	uoe d d	s not require transport proteins.
4	U. It occurs against a concentration gradient an		hin the cell to the external environment?
 4.	a Facilitated diffusion	witi C	Endocytosis
	b. Passive transport	d.	Exocytosis
5.	Which of the following factors limits the size of	ac	ell?
	a. Surface area of plasma membrane	c.	Speed of diffusion
	b. Amount of DNA	d.	All of the above
 6.	Which of the following does NOT occur during	inte	erphase?
	a. Chromosome duplication	c.	Cell metabolism
	b. Cell division	d.	Cell growth
 7.	During which phase of mitosis are sister chroma	atid	s pulled to opposite sides of the cell?
	a. Prophase	c.	Anaphase
_	b. Metaphase	d.	Telophase
 8.	Telophase is accompanied by the division of cyt called?	topl	asm between the two daughter cells. What is this process
	a. Prophase	c.	Interphase
~	b. Cytokinesis	d.	Metaphase
 9.	In some cases, cancer can spread from one part	of t	he body to another. What is the spread of cancer called?
	a. Tumorigenesis	c. d	Metastasis Osmosis
10	Early to control the call evals can be caused by	u.	Osmosis
 10.	a lack of enzyme production	у — С	- inappropriate expression of enzyme
	b overproduction of enzyme	d.	All of the above
11	Water moves into a cell placed in $a(n)$ so	u. Inti	on
 	a. osmotic	c.	hypotonic
	b. hypertonic	d.	isotonic
 12.	Water moves out of a cell if the cell is placed in	a(r	a) solution.
	a. hypertonic	c.	hypotonic

	b. isotonic	d.	passive
13.	If cells are placed in a strong sugar solution, w	ater	will .
 101	a. pass from the sugar solution to the cells		
	b. pass from the cells to the sugar solution		
	c stay in the cell		
	d. pass back and forth		
14	A cell moves particles from a region of lesser of	onc	centration to a region of greater concentration by
 17.	a facilitated diffusion		osmosis
	b passive transport	d.	active transport
15	If a call is alread in calt water water leaves the	u.	
 13.	in a centis placed in sait water, water leaves the		1 Dy
	a. Osmosis	С. Л	active transport
	D. diffusion	a.	phagocytosis
 16.	Which of the following is <u>not</u> a form of passive	e tra	nsport?
	a. facilitated diffusion	c.	facilitated diffusion
	b. endocytosis	d.	osmosis
 17.	The structure most responsible for maintaining	cel	homeostasis is the
	a. cytoplasm	c.	cell wall
	b. mitochondrion	d.	plasma membrane
 18.	The causes of cancer may include which of the	fol	lowing?
	a. environmental influences	c.	viruses
	b. UV radiation	d.	all of the above
19.	A gene is a segment of DNA that controls the	orod	luction of
 	a. carbohydrates	с.	centromeres
	b. microtubules	d.	proteins
20	Which of the following monitors a cell's progra	ess f	from phase to phase during the cell cycle?
 20.	a a series of enzymes	с с	lipid molecules
	b. microtubules	d.	protein molecules
21	If the sides of a cell double in length, its volum	e. An in	creases by times
 21.	a two		six
	h four	d.	eight
\mathbf{r}	If the sides of a call double in length its surface	u.	as bacomas timos as larga
 <i>LL</i> .	If the sides of a cell double in length, its surface		ea becomes times as large.
	a. two	с. d	SIA oight
22	Which of the fall and a small include a life of	u.	
 23.	which of the following explains why a cell's si	ze 1	s limited?
	a. volume increases faster than surface area.		
	b. Surface area increases faster than volume.	1	
	c. Homeostasis is disrupted by a cell that is to	00 12	uge.
		•	
 24.	As a cell grows, its increases more than	its_	
	a. length, volume	с.	volume, surface area
	b. width, surface area	d.	none of these
 25.	Among the following, the term that includes the	e ot	hers is
	a. interphase	c.	mitosis
	b. nuclear division	d.	cell cycle
 26.	By the end of prophase, each of the following l	has	occurred except
	a. tighter coiling of the chromosomes		
	b. breaking down of the nuclear envelope		
	c. disappearing of the nucleolus		

	d. lining up of chromosomes in the cell		
 27.	Unlike plant cells, animal cells contain		
	a. cell walls	c.	nucleoli
	b. centrioles	d.	spindles
 28.	The longest phase of the cell cycle is		
	a. prophase	c.	metaphase
	b. interphase	d.	mitosis
 29.	A chromatid is attached to a spindle fiber by th	ne	
	a. nucleolus	c.	centromere
	b. deep furrow	d.	centriole
 30.	Which of the following structures is the most of	comp	olex?
	a. cell	c.	organ
	b. organ system	d.	tissue

31. Which conditions shown in Figure 8-4 might cause a cell to burst?







Figure 8-5

a. active transport

c. facilitated diffusion

- b. passive transport d. osmosis
- _ 33. The chromosomes shown in Figure 8-6 are in which state of mitosis?



Figure 8-6

- a. prophase
- b. metaphase

- c. anaphase
- d. telophase
- 34. What level of organization is shown in Figure 8-7?



- ____ 35. Which of the cells depicted in the line graph in Figure 8-8 are most likely cancerous? a. A c. C
 - b. B d. D
- _____ 36. If cancer is present, what is the likely explanation for what happened to cells B and D?
 - a. they thrived with the cancerous cells
 - b. they were harmed by radiation therapy
 - c. they died off on due to natural causes
 - d. they died off because the cancerous cells deprived them of nutrients

Completion

Complete each statement.

37. The structures that hold together sister chromatids are _____

- 38. In a dividing cell, the football-shaped structure consisting of thin fibers is the ______
- 39. The process by which nuclear material is divided equally between two new cells is _____
- 40. The dark-staining structures that carry the genetic material are the _____

- 41. The uncontrolled division of cells that results in a malignant growth is known as ______
- 42. The two halves of a doubled chromosome structure are called ______.
- 43. The sequence of growth and division of a cell makes up the _____
- 44. The phase of mitosis in which the sister chromatids separate from each other is ______.
- 45. Cells that work together to perform the same function are organized into _____

Matching

Match each item with the correct statement below.

a. energy

c. endocytosisd. passive transport

b. facilitated diffusion

- e. active transport
- f. exocytosis
- g. carrier protein h. channel protein
- 46. Transport protein that provides a tubelike opening in the plasma membrane through which particles can diffuse
- _____ 47. Is used during active transport but not passive transport
- 48. Process by which a cell takes in material by forming a vacuole around it
- 49. Particle movement from an area of higher concentration to an area of lower concentration
- _____ 50. Process by which a cell expels wastes from a vacuole
- _____ 51. A form of passive transport that uses transport proteins
- _____ 52. Particle movement from an area of lower concentration to an area of higher concentration
- _____ 53. Transport protein that changes shape when a particle binds with it

Match each item with the correct statement below.

- a. exocytosisd. isotonic solutionb. genee. osmosis
- c. diffusion f. hypertonic solution
- 54. movement of particles from an area of higher concentration to one of lower concentration
- _____ 55. the concentration of dissolved substances outside the cell is higher than the concentration inside the cell
- 56. the concentration of dissolved substances in the solution is the same as the concentration of dissolved
- substances inside the cell
- _____ 57. a segment of DNA that controls the production of a protein
- _____ 58. diffusion of water molecules through a selectively permeable membrane
- _____ 59. release of wastes or cell products from inside to outside a cell

Short Answer

60. Compare and contrast the structure and function of *channel proteins* and *carrier proteins*.

A selectively permeable membrane is stretched across a funnel filled with starch solution. Figure 8-1 shows the funnel inverted into a beaker containing an iodine solution. Starch molecules are too large to diffuse across the membrane; iodine molecules are not. If iodine reacts with starch, the starch turns blue-black. Suppose you observe the setup after several hours.



Figure 8-1

- 61. Does the level of the liquid rise, fall, or remain the same in the stem of the inverted funnel shown in Figure 8-1? Why?
- 62. Referring to Figure 8-1, does the starch solution change color? Explain.
- 63. Referring to Figure 8-1, does the iodine solution change color? Explain.
- 64. Predict what would happen if a saltwater plant were placed in a freshwater aquarium.
- 65. Pickled foods are preserved with salt. How might a strong salt solution preserve cucumbers?



- 66. The graph in Figure 8-2 shows typical concentrations of several ions inside and outside an animal cell. Concentrations of ions inside the cell are shown in gray, outside in black. Describe the process by which the cell maintains differences in concentration of certain ions inside and outside the cell.
- 67. The graph in Figure 8-2 shows typical concentrations of several ions inside and outside an animal cell. Concentrations of ions inside the cell are shown in gray, outside in black. If all available Na⁺ and Cl⁻ ions combine to form NaCl, do any excess Na⁺ or Cl⁻ ions remain? If so, which?
- 68. The graph in Figure 8-2 shows typical concentrations of several ions inside and outside an animal cell. Concentrations of ions inside the cell are shown in gray, outside in black. What is the approximate concentration in mM of Mg²⁺ ions inside the cell?

- 69. The graph in Figure 8-2 shows typical concentrations of several ions inside and outside an animal cell. Concentrations of ions inside the cell are shown in gray, outside in black. Which ions are in the lowest concentration inside the animal cell?
- 70. The graph in Figure 8-2 shows typical concentrations of several ions inside and outside an animal cell. Concentrations of ions inside the cell are shown in gray, outside in black. Which ions are in the greatest concentration outside the animal cell?
- 71. The graph in Figure 8-2 shows typical concentrations of several ions inside and outside an animal cell. Concentrations of ions inside the cell are shown in gray, outside in black. Compared to its surroundings, does an animal cell contain a higher or lower concentration of potassium (K⁺) ions?



- 72. Sequence the six diagrams in Figure 8-3 in order from first to last, beginning with D.
- 73. Cells A and F of Figure 8-3 show an early and a late stage of the same phase of mitosis. What phase is it?
- 74. Which cell of Figure 8-3 is in metaphase?
- 75. In an animal cell undergoing mitosis, the spindle first appears as two asters, structures in which fibers radiate out from each centriole. Would you expect to find asters in plant cells? Why or why not?
- 76. When prokaryotic bacterial cells undergo cell division, the single circular chromosome replicates to form a second chromosome. This new chromosome, like the original, attaches to the plasma membrane. Next, the plasma membrane pinches inward, and a cell wall forms across the middle of the cell to separate the two chromosomes and form two daughter cells. How does cell division in bacteria differ from mitosis in eukaryotes?
- 77. Cytokinesis is the division of the cytoplasm when a cell divides. In precisely which phase of the cell cycle does cytokinesis occur?
- 78. In 1952, a prominent botany text described interphase as the first phase of mitosis. Now, more than 40 years later, would scientists agree or disagree with that description? Explain.

The large size of many fruits and flowers is the result of polyploidy, a condition in which the nuclei of an organism's cells contain extra sets of chromosomes. Polyploidy often occurs naturally, but it can also be artificially induced by plant breeders. How have breeders been able to mimic a naturally occurring phenomenon?

Researchers have determined that the chemical colchicine suppresses cell division by preventing the formation of spindle fibers. Without these fibers, the sister chromatids cannot become properly oriented for separation into individual nuclei. In effect, mitosis is stopped after prophase. However, the cell may continue to make copies of its chromosomes. As a result, the nucleus of the cell contains multiple sets of chromosomes.

Suppose a researcher wished to investigate how extra sets of chromosomes are produced. First, she treated two onion roots with a colchicine solution and left two roots untreated. After a period of several days, she placed thin slices from each root tip on separate slides, stained the specimens, and examined the slides under a microscope at high power.

- 79. "Why does treating cells with colchicine prevent the formation of the spindle fibers?" Is this question the statement of the problem or the conclusion of a further investigation? Explain.
- 80. If the researcher finds only cells in interphase and prophase in the slides of treated root tips, what might be her interpretation?
- 81. How do you predict the slides of treated and untreated root tips will differ?
- 82. What was the variable in the investigation?
- 83. Which root tips were the controls? Which root tips were the experimentals?
- 84. What is the hypothesis the researcher investigated?
- 85. Based on your study of cells, argue for or against the following statement: "Cells in unicellular organisms are more complex than cells in multicellular organisms."

Q1W6-Biology 10- Qs Bank-Cyto-Cell Cycle Answer Section

MULTIPLE CHOICE

1. ANS: C

Bacteria are prokaryotes, which do not contain membrane-bound nuclei. Viruses also do not have nuclei. Plants are eukaryotes, which do have nuclei—nuclear material contained within a membrane.

PTS: 1

2. ANS: A

When the concentration of dissolved substances is higher outside the cell, the extracellular solution is considered hypertonic.

PTS: 1

3. ANS: A

Facilitated diffusion is a form of passive transport, and thus occurs with a concentration gradient. However, facilitated diffusion requires transport proteins to pass molecules through the plasma membrane.

PTS: 1

4. ANS: D

The expulsion of wastes occurs via exocytosis. Wastes are packaged in vacuoles within the cell and are then secreted to the extracellular environment.

PTS: 1

5. ANS: D

The size of a cell is limited by the slow rate of diffusion, the limited amount of DNA in the nucleus, and the decreasing surface area-to-volume ratio.

PTS: 1

6. ANS: B

Interphase includes the G1, S, and G2 phases in which the cell grows, metabolizes, and synthesizes new DNA. Cell division occurs during mitosis.

PTS: 1

7. ANS: C

During anaphase, the centromeres split and sister chromatids are pulled apart.

PTS: 1

8. ANS: B

Cytokinesis is the process of dividing the parent cell's cytoplasm between the two daughter cells.

PTS: 1

9. ANS: C

Metastasis is the systemic spread of cancerous cells.

PTS: 1

10. ANS: D

The cell cycle is regulated by a variety of enzymes. Any errors in the production or expression of these proteins can result in abnormal cell growth.

11	PIS: I	DTC	1	DIE	D	OBI	87
11.	NAT: $C1 \mid C5$	гıз.	1	DII [*] .	Б	ODJ.	0-2
12.	ANS: A	PTS:	1	DIF:	В	OBJ:	8-2
	NAT: C1 C5						
13.	ANS: B	PTS:	1	DIF:	В	OBJ:	8-2
	NAT: C1 C5						
14.	ANS: D	PTS:	1	DIF:	В	OBJ:	8-1
	NAT: C1 C5				_		
15.	ANS: A	PTS:	1	DIF:	В	OBJ:	8-1
16	NAI: $CI CS$	DTC.	1	DIE.	р	ODL	01
10.	ANS: D NAT: $C1 \mid C5$	P15:	1	DIF:	D	ODJ:	0-1
17	ANS: D	PTS∙	1	DIF	В	OBI.	8-1
17.	NAT: C1 C5	110.	1	211.	D	0.20	01
18.	ANS: D	PTS:	1	DIF:	В	OBJ:	8-6
	NAT: C1 C6 G1						
19.	ANS: D	PTS:	1	DIF:	В	OBJ:	8-4
	NAT: C1 C5 G1						
20.	ANS: A	PTS:	1	DIF:	В	OBJ:	8-5
01	NAT: CI C6 GI	DTC	1	DIE	р	ODL	0.4
21.	ANS: D	P15:	1	DIF:	В	OB1:	8-4
22	ANS: B	PTS ·	1	DIE	в	OBI	8-1
22.	NAT: $C1 C5 G1$	115.	1	υп.	D	ODJ.	0-4
23.	ANS: D	PTS:	1	DIF:	В	OBJ:	8-4
	NAT: C1 C5 G1						
24.	ANS: C	PTS:	1	DIF:	В	OBJ:	8-4
	NAT: C1 C5 G1						
25.	ANS: D	PTS:	1	DIF:	В	OBJ:	8-3
26	NAT: CI C5 GI	DTC	1	DIE	D	ODI	0.0
26.	ANS: D	P15:	1	DIF:	В	OB1:	8-3
27	ANS: B	ΡΤS ·	1	DIE	B	OBI	8-3
27.	NAT: C1 C5 G1	115.	1	DII.	D	ODJ.	0-5
28.	ANS: B	PTS:	1	DIF:	В	OBJ:	8-3
	NAT: C1 C5 G1						
29.	ANS: C	PTS:	1	DIF:	В	OBJ:	8-3
	NAT: C1 C5 G1						
30.	ANS: B	PTS:	1	DIF:	В	OBJ:	8-4
01	NAT: CI C5 GI	DTC	1	DIE		ODI	0.0
51.	ANS: B NAT: $C1 \downarrow C5$	P15:	1	DIF:	А	OR1:	8-2
32	ANS: C	ΡΤ ς.	1	DIE	Δ	ORI-	8-1
54.	NAT: C1 C5	110.	1		<i>1</i> 1	<u>О</u> ДJ.	0-1
33.	ANS: C	PTS:	1	DIF:	А	OBJ:	8-3

		NAT:	C1 C5 G1						
	34.	ANS:	С	PTS:	1	DIF:	В	OBJ:	8-4
	25	NAT:	C1 C5 G1	DTTG		БШ		ODI	0.6
	35.	ANS:	$A \\ C1 \mid C6 \mid C1$	PTS:	1	DIF:	A	OBJ:	8-6
	36	ANS.	D	PTS ∙	1	DIF	А	OBI [,]	8-6
	20.	NAT:	C1 C6 G1	110.		DH.		020.	0.0
COM	PLE	ΓΙΟΝ							
	37.	ANS:	centromeres						
		DTC	1	DIE	D	ODL	0.2	MAT.	$C1 \mid C5 \mid C1$
	38	PIS: ANS·	1 spindle	DIF:	В	ORI:	8-3	NAI:	
	50.	71110.	spinale						
		PTS:	1	DIF:	В	OBJ:	8-3	NAT:	$C1 \mid C5 \mid G1$
	39.	ANS:	mitosis						
		PTS:	1	DIF:	В	OBJ:	8-3	NAT:	C1 C5 G1
	40.	ANS:	chromosomes						
		DTC	1	DIE	D	ODI	0.2	NAT	
	<i>I</i> 1	PIS:	l	DIF:	В	ORI:	8-3	NAI:	CI C5 GI
	41.	AND.	Calleel						
		PTS:	1	DIF:	В	OBJ:	8-6	NAT:	$C1 \mid C6 \mid G1$
	42.	ANS:	sister chromat	ids					
		PTS∙	1	DIF	В	OBI.	8-3	NAT·	C1 C5 G1
	43.	ANS:	cell cycle	211.	2	0.20	0.0		01 00 01
			2						
		PTS:	1	DIF:	В	OBJ:	8-3	NAT:	C1 C5 G1
	44.	ANS:	anaphase						
		PTS:	1	DIF:	В	OBJ:	8-3	NAT:	C1 C5 G1
	45.	ANS:	tissues						
		DTC.	1	DIF.	D	OD I.	0 1	NATE	$C1 \mid C5 \mid C1$
		P12:	1	DIF:	D	ORI:	0-4	INAI:	

MATCHING

46.	ANS:	Η	PTS:	1
47.	ANS:	А	PTS:	1
48.	ANS:	С	PTS:	1
49.	ANS:	D	PTS:	1
50.	ANS:	F	PTS:	1
51.	ANS:	В	PTS:	1
52.	ANS:	E	PTS:	1
53.	ANS:	G	PTS:	1

54.	ANS: C	PTS:	1	DIF:	В	OBJ:	8-1
	NAT: C1 C5						
55.	ANS: F	PTS:	1	DIF:	В	OBJ:	8-1
	NAT: CI C5	DTTC	1	DIE	D	ODI	0.1
56.	ANS: D	PTS:	1	DIF:	В	OBI:	8-1
57	$\begin{array}{c} \text{NAT: } CT \mid CS \\ \text{ANS: } P \end{array}$	DTC	1	DIE	D	OBI	Q 1
57.	NAT: $C1 \mid C5$	r 15.	1	DII [*] .	D	OBJ.	0-1
58.	ANS: E	PTS:	1	DIF:	В	OBJ:	8-1
	NAT: C1 C5						
59.	ANS: A	PTS:	1	DIF:	В	OBJ:	8-1
	NAT: C1 C5						

SHORT ANSWER

60. ANS:

Both are transport proteins embedded in the plasma membrane. Channel proteins enable passive transport to take place; channel proteins are tubelike and provide openings that allow dissolved particles to diffuse across the cell membrane. Carrier proteins generally have a shape that fits a specific molecule or ion. When the proper molecule binds with the carrier protein, it causes the protein to change its shape so that the particle is moved across the membrane. Once the particle is released, the protein returns to its original shape. In the case of active transport, energy is required by the carrier protein.

PTS: 1 DIF: A OBJ: 8-1 NAT: C1 | C5

61. ANS:

The level rises because some of the iodine solution diffuses into the starch solution in the funnel, increasing the volume of liquid.

PTS: 1	DIF: B	OBJ: 8-2	NAT: C1 C5

62. ANS:

Yes; iodine diffuses into the starch solution, turning it blue-black.

63. ANS:

No, because starch molecules do not diffuse into the iodine solution.

PTS: 1 DIF: B OBJ: 8-2 NAT: C1 | C5

64. ANS:

Water would move into the plant cells, causing them to swell. If the cell wall were not strong enough to tolerate the increasing pressure, the cell would burst.

PTS: 1 DIF: A OBJ: 8-2 NAT: C1 | C5

65. ANS: When fresh cucumber is placed in a salt solution that is hypertonic, the water from the cucumber cells passes into the salt solution until it is isotonic. Any bacterial cells present would also lose water to the salt solution, causing the bacteria to shrivel and die. The pickle is then preserved from decay.

PTS: 1 DIF: A OBJ: 8-2 NAT: C1 | C5

66. ANS:

To move ions into or out of a cell, against a gradient, cells use the process of active transport. Transport proteins bind with the ions and carry them across the membrane. Chemical energy from the cell is needed for active transport.

67.	PTS: 1 ANS: Yes; Na ⁺ ions	DIF:	A	OBJ:	8-2	NAT: C1 C5
68.	PTS: 1 ANS: 30 mM	DIF:	В	OBJ:	8-2	NAT: C1 C5
69.	PTS: 1 ANS: Ca^{2+}	DIF:	В	OBJ:	8-2	NAT: C1 C5
70.	PTS: 1 ANS: N a^+	DIF:	В	OBJ:	8-2	NAT: C1 C5
71.	PTS: 1 ANS: higher	DIF:	В	OBJ:	8-2	NAT: C1 C5
72.	PTS: 1 ANS: D, A, F, C, E, B	DIF:	В	OBJ:	8-2	NAT: C1 C5
73.	PTS: 1 ANS: prophase	DIF:	В	OBJ:	8-3	NAT: C1 C5 G1
74.	PTS: 1 ANS: C	DIF:	В	OBJ:	8-3	NAT: C1 C5 G1
75.	PTS: 1 ANS: No; because pla	DIF: nt cells have	B no centrioles, th	OBJ: nere wo	8-3 ould be no struc	NAT: C1 C5 G1
76.	PTS: 1 ANS:	DIF:	А	OBJ:	8-3	NAT: C1 C5 G1

In bacteria, no spindle, no chromatin, no complex separation of the chromosomes, and no migration of chromosomes to either end of the original cell occur. A cell plate does not form as in plant cells, and the plasma membrane pinches inward rather than growing outward to form two new cells.

PTS: 1 DIF: A OBJ: 8-3 NAT: C1 | C5 | G1

77. ANS: telophase of mitosis

78.	PTS: ANS:	1	DIF:	В	OBJ:	8-3	NAT: C1 C5 G1			
	Disagree; interphase is not a phase of mitosis. Today, scientists have learned that interphase is a long period that occurs between two successive mitoses.									
79.	PTS: ANS:	1	DIF:	А	OBJ:	8-3	NAT: C1 C5 G1			
	It state	es the problem;	a concl	lusion is never	stated a	s a question.				
80.	PTS: ANS:	1	DIF:	А	OBJ:	8-3	NAT: C1 C5 G1			
	The co	olchicine stoppe	ed mito	sis after propha	ise.					
81.	PTS: ANS:	1	DIF:	А	OBJ:	8-3	NAT: C1 C5 G1			
	Answe mitosi some c	ers may vary. T s. The slides of cells with multi	The slide treated ple sets	es of untreated l root tips will s s of chromosom	root tip how ce ies.	s will show cel lls only in inter	ls in interphase and in various stages of phase and in prophase, and they may show			
82.	PTS: ANS: the use	1 e of colchicine	DIF:	Α	OBJ:	8-3	NAT: C1 C5 G1			
83.	PTS: ANS:	1	DIF:	А	OBJ:	8-3	NAT: C1 C5 G1			
	The ur	ntreated root tip	os were	the controls; th	e root t	ips treated with	colchicine were the experimentals.			
84.	PTS: ANS:	1	DIF:	А	OBJ:	8-3	NAT: C1 C5 G1			
	that co	lchicine produ	ces cell	s with multiple	sets of	chromosomes	in their nuclei			
85.	PTS: ANS:	1	DIF:	А	OBJ:	8-3	NAT: C1 C5 G1			
	In mul function can be	In multicellular organisms, many different kinds of cells work together to perform the necessary life functions. In unicellular organisms, the one cell must carry out all of the functions necessary for life and thus can be considered to be more complex.								

PTS: 1 DIF: A OBJ: 8-1 NAT: C1 | C5