Name: Date:

Circulatory-Respiratory-Excretory

Multiple Choice

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

1	Where does air go after passing the eniglottis?		
 1.	a. Larvnx	c.	Lungs
	b. Pharynx	d.	Stomach
2.	Which of the following structures is the site of	gas	exchange during respiration?
 	a. Trachea	с.	Alveoli
	b. Bronchi	d.	Larynx
3.	When the diaphragm contracts, the chest cavity	v bec	comes —
	a. smaller, causing increased pressure in the	ches	t.
	b. smaller, causing decreased pressure in the	ches	st.
	c. larger, causing increased pressure in the ch	nest.	
	d. larger, causing decreased pressure in the c	hest.	
 4.	What controls the rate of breathing?		
	a. Medulla oblongata	c.	Hypothalamus
	b. Hippocampus	d.	Cerebellum
 5.	As a result of osmotic pressure, water, glucose,	, and	waste products are filtered into which part of the
	nephron?		
	a. Urethra	С.	Bowman's capsule
(a.	Oreter
 6.	During the process of respiration,		
	a. Oxygen is delivered to body cens. b. carbon dioxide is expelled from the body.		
	c oxygen is used in cells to produce ATP.		
	d. all of these.		
7.	When you swallow, your epiglottis momentaril	v co	vers the top of the trachea so that
	a. you can swallow more easily.	5	1
	b. you can breathe more easily.		
	c. you don't get food in your air passages.		
	d. you can cough up foreign matter.		
 8.	The cilia that line your trachea and bronchi		
	a. produce dirt-trapping mucus.		
	b. help in the exchange of oxygen and CO2.		
	c. move mucus and dirt upward.		
-	d. only beat when you inhale.		
 9.	The first branches off the trachea are called		
	a. bronchioles.	С.	arterioles.
10	b. bronchi.	a.	alveon.
 10.	inside the alveoli, carbon dioxide and oxygen		
	a. are transported along microscopic tubules		
	c. are produced inside cells.		
	d. are exchanged for other gases.		
	8		

Name:

 11.	. Which is the correct sequence for the path of oxygen through the respiratory system?								
	a. nasal passages, bronchi, trachea, bronchioles, cells, blood, alveoli								
	b. cells, blood, alveoli, bronchioles, bronchi, trachea, nasal passages								
	c. nasal passages, blood, alveoli, bronchi, cells, trachea, bronchioles	c. nasal passages, blood, alveoli, bronchi, cells, trachea, bronchioles							
	d. nasal passages, trachea, bronchi, bronchioles, alveoli, blood, cells								
 12. Which organ filters blood that has collected wastes from cells throughout the body and n homeostasis of body fluids?									
	a. kidneys c. lungs								
	b. heart d. pacemaker								
 13.	3. The process that uses oxygen to break down glucose, producing energy, takes	s place							
	a. only in the lungs c. in alveoli								
	b. when the diaphragm contracts d. within cells								
 14.	4. Which of the following is associated with cellular respiration?								
	a. metabolic processes c. gas exchange in cells								
	b. ATP formation d. all of these								
 15.	5. Which of the following is true of breathing?								
	a. homeostatic process c. coordinated process								
	b. involuntary process d. all of these								
 16.	6. Which of the following is the shape of the diaphragm when it is in the exhali	ng position?							
	a. circular c. flat								
	b. dome shape d. triangular								
	Figure 37-3								
17	7. How would the diaphragm change in Figure 37-3 in order to inhale?								
 1/1	a. flatten and lower c. flatten and go higher								
	b. expand and go higher d. expand and lower								

- 18. What would happen to the diaphragm in Figure 37-3 during a cough?
 - c. it would move up rapidly
 - b. it would remain still d. it would relax
- 19. Approximately what is the gas concentration at the point marked X in Figure 37-3 if it is at a high pressure?
 - a. more oxygen, less carbon dioxide c. more oxygen, more carbon dioxide
 - b. less oxygen, more carbon dioxide d. less oxygen, less carbon dioxide
- 20. What antibodies does the sample shown in Figure 37-4 have?

a. it would flutter

- a. A c. both
- b. B d. neither

True/False

Indicate whether the statement is true or false.

- _____ 21. Homeostasis in respiration is controlled by the cerebrum.
- _____ 22. As you exhale, the bronchioles in the lungs release most of their air.
- _____ 23. When you inhale, the muscles between your ribs contract.
- _____ 24. Relaxation of the diaphragm causes a slight vacuum in the lungs.
- _____ 25. Air rushes into the lungs because the air pressure outside the body is greater than the air pressure inside the lungs.
- _____ 26. Relaxation of the diaphragm causes it to flatten.
- 27. The respiratory system uses oxygen in the breakdown of glucose in cells in order to provide energy in the form of ATP.
- 28. Breathing is controlled by changes in the chemistry of the blood, which cause the medulla oblongata to react.
- 29. When your diaphragm contracts, the space in the chest cavity becomes larger.
 - _____ 30. Carbon dioxide and oxygen are the waste products of cellular respiration.

Short Answer

- 31. How is carbon dioxide transported in blood?
- 32. How would you describe the differences between external and internal respiration to a person who has little understanding of biology?
- 33. How is the volume of the chest cavity increased during inhalation?
- 34. Trace a molecule of oxygen from the atmosphere through the external respiratory system.
- 35. How does the respiratory system prevent most of the foreign matter in urban air from reaching your lungs?
- 36. When a person has pneumonia, the alveoli become inflamed and the air spaces become clogged. What effect will these symptoms have on a pneumonia patient?

Circulatory-Respiratory-Excretory Answer Section

MULTIPLE CHOICE

1. ANS: A

After passing the epiglottis, air moves through the larynx on its way to the lungs.

PTS: 1

2. ANS: C

Gas exchange takes place in the alveoli, tiny sacs of the lungs surrounded by a network of blood vessels.

PTS: 1

3. ANS: D

The diaphragm contracts to increase the size of the chest cavity. This increase in volume causes a drop in air pressure inside the chest, resulting in the intake of air.

PTS: 1

4. ANS: A

Breathing rate is under involuntary control by the medulla oblongata, which responds to the level of carbon dioxide in the blood.

PTS: 1

5. ANS: C

Particles from the blood are filtered into the Bowman's capsule.

PTS: 1

~		D	DTG					
6.	ANS:	D	PTS:	1				
7.	ANS:	С	PTS:	1				
8.	ANS:	С	PTS:	1				
9.	ANS:	В	PTS:	1				
10.	ANS:	А	PTS:	1				
11.	ANS:	D	PTS:	1				
12.	ANS:	А	PTS:	1	DIF:	В	OBJ:	37-7
	NAT:	C5 F1 G1						
13.	ANS:	D	PTS:	1	DIF:	В	OBJ:	37-2
	NAT:	C1 C5 F4						
14.	ANS:	D	PTS:	1	DIF:	В	OBJ:	37-2
	NAT:	C1 C5 F4						
15.	ANS:	D	PTS:	1	DIF:	В	OBJ:	37-3
	NAT:	C1 C5 F1						
16.	ANS:	В	PTS:	1	DIF:	В	OBJ:	37-3
	NAT:	C1 C5 F1						
17.	ANS:	А	PTS:	1	DIF:	А	OBJ:	37-3
	NAT:	C1 C5 F1						

18.	ANS: NAT:	C C1 C5 F1	PTS:	1	DIF:	А	OBJ:	37-3
19.	ANS:	B	PTS:	1	DIF:	А	OBJ:	37-3
	NAT:	C1 C5 F1						
20.	ANS:	С	PTS:	1	DIF:	А	OBJ:	37-4
	NAT:	C1 C5						
TRUE/FA	LSE							
		_						
21.	ANS:	F	PTS:	1				
22.	ANS:	F	PTS:	1				
23.	ANS:	Т	PTS:	1				
24.	ANS:	F	PTS:	1				
25.	ANS:	Т	PTS:	1				
26.	ANS:	F	PTS:	1				
27.	ANS:	F	PTS:	1	DIF:	В	OBJ:	37-2
	NAT:	C1 C5 F4						
28.	ANS:	Т	PTS:	1	DIF:	В	OBJ:	37-3
	NAT:	C1 C5 F1						
29.	ANS:	Т	PTS:	1	DIF:	В	OBJ:	37-3
	NAT:	C1 C5 F1						
30.	ANS:	F	PTS:	1	DIF:	В	OBJ:	37-3
	NAT:	C1 C5 F1						

SHORT ANSWER

31. ANS:

About 70% combines with water in the plasma to form bicarbonate; the rest is carried by hemoglobin and/or dissolved in plasma.

PTS: 1

32. ANS:

Answers may include: External respiration is better termed *breathing*. It deals with getting oxygen from the atmosphere to the cells through lungs and alveoli. Once oxygen enters the cell, internal respiration begins. Internal respiration is all of the activities of metabolism that use oxygen in chemical reactions to release ATP.

PTS:	1	DIF: A	OBJ: 37-2	NAT: C1	C5 F4

33. ANS:

When you inhale, the muscles between your ribs contract, and your rib cage rises. At the same time, your diaphragm contracts and moves lower in the chest cavity.

PTS: 1 DIF: A OBJ: 37-3 NAT: C1 | C5 | F1

34. ANS:

The oxygen is inhaled through the nose. It passes through the pharynx and the larynx, and it enters the bronchi. The bronchi branch into the lungs where oxygen passes into the alveoli, enters the bloodstream, and is carried to the cells.

PTS: 1 DIF: A OBJ: 37-1 NAT: B3 | C1 | C5

35. ANS: The trachea and bronchi are lined with cilia that constantly beat upward toward your throat so that foreign particles can be expelled or swallowed. Also cells in the trachea and the bronchi secrete mucus that can trap the particles.

- PTS: 1 DIF: B OBJ: 37-1 NAT: B3 | C1 | C5
- 36. ANS: Gas exchange between air and blood cannot take place. Unless this is remedied, the patient will die.

PTS: 1 DIF: A OBJ: 37-1 NAT: B3 | C1 | C5