

1. The alimentary canal includes 8 different parts and 4 accessory organs. Name 5 parts from the alimentary canal and 3 accessory organs.(8 pts.)
2. Which layer of the alimentary canal is composed of visceral peritoneum on the outer covering of the tube. (1 pt.)
3. What is it called when sugar remains undigested, increasing the osmotic pressure of the intestinal contents and drawing water into the intestines? (2 pts.)
4. Match the enzyme to their function: (7pts)

- | | |
|---|---|
| a. Peptidase | 1. Begins protein digestion ← |
| b. Amylase | 2. Breaks fats into fatty acids and glycerol |
| c. Nuclease | 3. Breaks down proteins into peptides ← |
| d. Lipase | 4. Breaks down starch and glycogen into disaccharides |
| e. Pepsin | 5. Breaks down peptides into amino acids ← |
| f. Trypsin, chymotrypsin
And carboxypeptides | 6. Breaks down nucleic acids into nucleotides |
| g. Sucrose, maltase, lactose | 7. Breaks down disaccharides into monosaccharides |

5. Which two organs does Crohn's disease effect? (2 pts.)
6. The following symptoms indicate what disease: changes in frequency of bowel movements, narrowing of feces, blood in feces, abdominal pain, weight loss, fatigue and unexplained vomiting. (1 pt.) Tiebreaker #5
7. The following statement indicates what disease: Parts of the intestinal wall weaken and the inner mucous membrane protrudes through. (1 pt.)
8. Malabsorption of proteins found in grains is called? (1 pt.)
9. What disorder of the renal system is developed 1-3 weeks after beta-hemolytic streptococcus? (1 pt.)

10. Urinary tract infections are started when bacteria comes from the bladder to the _____? (1 pt.) *Tiebreaker 4*

11. How does increased hydrostatic pressure affect the GFR? (2 pts.)

12. What would cause an increase in hydrostatic pressure? (2 pts. Tiebreaker #4)

13. What type of drug would be given to relax muscles in BPH? (2 pts.)

14. Name 2 risk factors for BPH. (2 pts.)

15. Name the eight parts of the respiratory system (8 pts.)

16. What is Boyle's Law (2 pts)

17. Match the volumes/capacities to the correct respiratory term: (8 pts.) *Tiebreaker 7*

- | | |
|---------------------------------|------------|
| a. Tidal Volume | 1. 3000 mL |
| b. Expiratory Reserve Volume | 2. 500 mL |
| c. Residual Volume | 3. 1100 mL |
| d. Inspiratory Reserve Volume | 4. 1200 mL |
| e. Inspiratory Capacity | 5. 4600 mL |
| f. Vital Capacity | 6. 3500 mL |
| g. Total Lung Capacity | 7. 2300 mL |
| h. Functional Residual Capacity | 8. 5800 mL |

18. What is the purpose of nonrespiratory movements caused by reflex? (1 pts.)

19. Which respiratory passage is cleared by coughing? (1 pt.)

20. Which respiratory passage is cleared by sneezing? (1 pt.)

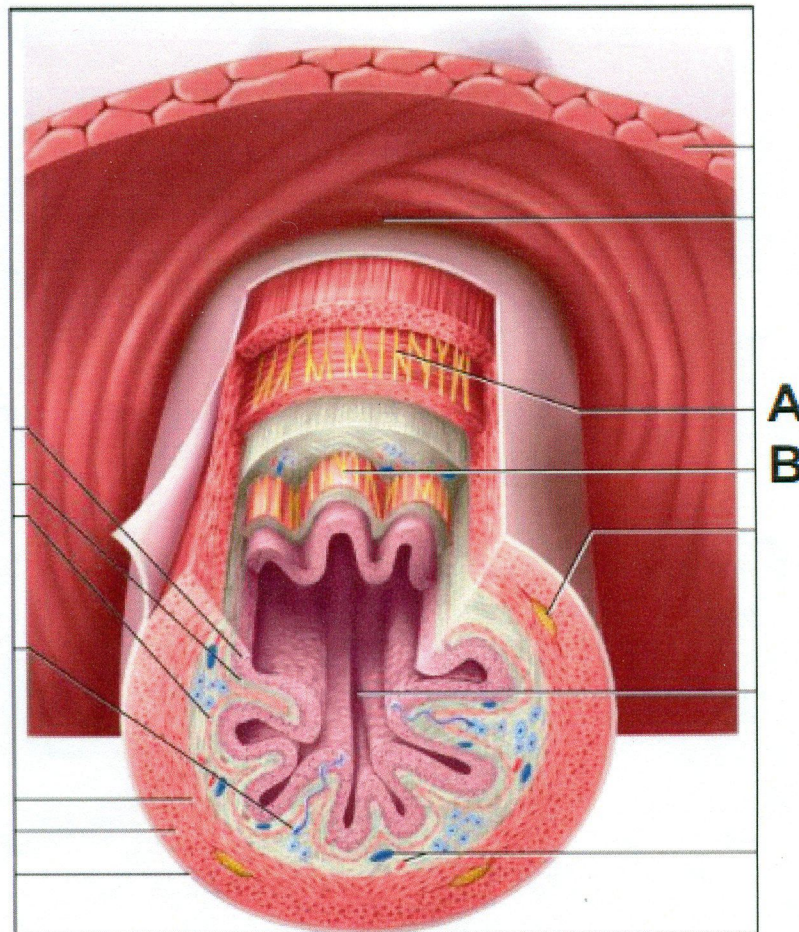
21. What is caused by contraction of the diaphragm while the glottis is closed? (1 pt.)

22. What disease is caused by the progressive degenerative destruction of alveolar walls? (1 pt.)

23. What is the most common treatment for obstructive sleep apnea in adults? (1 pt.)

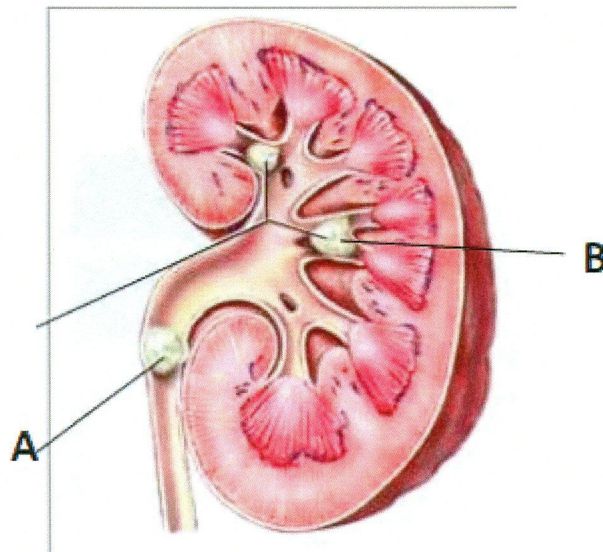
24. When doing moderate to heavy exercise, an increase in breathing rate also requires an increase in _____ to skeletal muscles. (1 pt.)

25. What disease process is characterized by edema in the alveolar linings allowing fluid and white blood cells to accumulate in the air sacs? (1 pt.)
26. What type of tissue forms in the lungs with a TB infection? (1 pt.)
27. Which of the following is most important in forceful breathing-ventral respiratory group, dorsal respiratory group or pontine respiratory group? (2 pts. Tiebreaker #1)
28. Calculate the AVR for the following patient: Respiratory rate = 12 breaths per minute, Tidal Volume = 500 mL per breath and physiologic dead space = 150 mL per breath. (4 pts. Tiebreaker #2)
- $12 \times (500 - 150) = 12 \times 350 = 4200$
29. Now calculate the minute ventilation rate (MVR) for the same patient. (4 pts. Tiebreaker #3)
30. Blood pressure affects urine formation because _____ of the blood is necessary to the transport mechanism used in the glomerulus. (2 pts. Tiebreaker #5).



Use the Figure above to answer the questions below with the correct letter:

- | | |
|--|---------------------------|
| 31. What region of the digestive tract is shown? | A. Myenteric plexus |
| 32. The layer lining the lumen is composed of what specific type of epithelial tissue? | B. Secretion from glands |
| 33. Region A is known as what structure in the nervous system? | C. Stratified squamous |
| 34. What neurotransmitter is produced in A? | D. Submucosal plexus |
| 35. Stimulatory signals reaching region A cause what event? | E. Peristalsis |
| 36. Region B is known as what structure in the nervous system? | F. Enteric nervous system |
| 37. Stimulatory signals reaching region B cause what event? | G. Esophagus |
| 38. Regions A and B are part of what branch of the peripheral nervous system? | H. Acetylcholine |



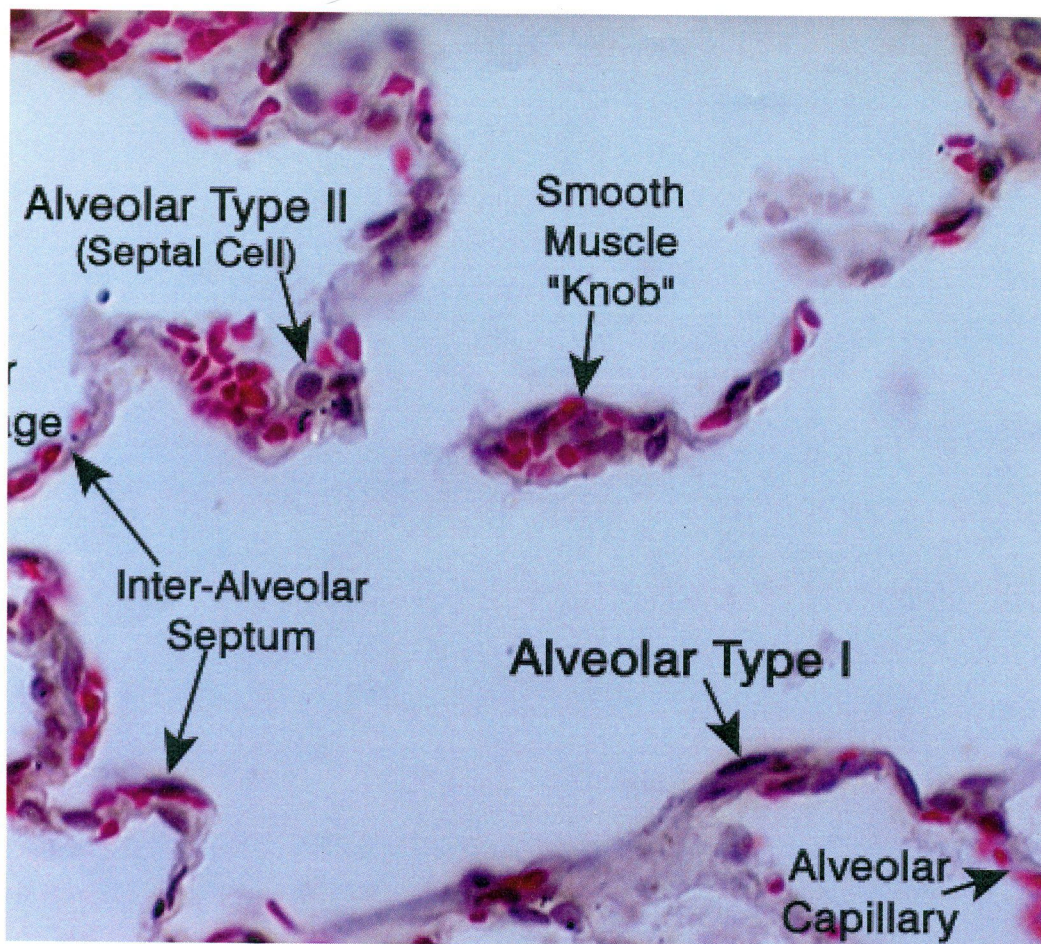
39. The kidney stone labeled A is located in what structure?
40. The kidney stone labeled B is located in what specific structure in the kidney? *Tie breaker #8*
41. Kidney stones most often are crystals of calcium and which substance?
42. Kidney stones in people with chronic UTIs are most often crystals of which substance?
43. Compared with males, what aspect of urinary system anatomy makes females more susceptible to UTIs?
44. Although UTIs are less common in males, one major cause of UTIs in men is hypertrophy of what organ?

Mrs. X is an adult patient with a creatinine clearance of 150 ml/min. She is hypertensive. She also experiences chronic hypokalemia and dehydration.

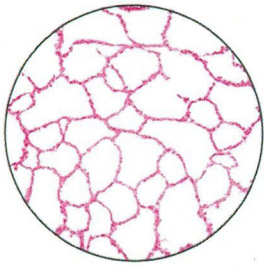
45. What is Mrs. X's approximate Glomerular Filtration Rate (GFR)?
46. What is the average GFR for an adult?
47. What process in the nephron is accelerated in Mrs. X?
48. What is the likely reason this process is accelerated in Mrs. X?
49. Where in the nephron does this process take place?
50. Hypokalemia means there are low _____ levels in the blood? *Tie breaker #9*
51. What is causing the hypokalemia and dehydration?
52. Hypokalemia can cause irregular heart beats or a condition called _____.

Mr. Q has been ill for sometime. He consumes tremendous quantities of water daily, yet he is chronically dehydrated. He also produces copious amounts of dilute urine each day.

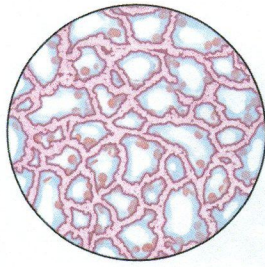
53. Mr. Q is likely experiencing which disorder?
54. What specific subtype of this disorder?
55. What hormone is deficient in Mr. Q (initials only)?
56. This hormone is produced in the _____.
57. This hormone is released from the posterior _____ gland.
58. This hormone acts on the _____ duct in the nephron?
59. This hormone's principle function in the nephron is to insert water _____.
60. The release of this hormone in healthy individuals is triggered by a decrease in _____ pressure.



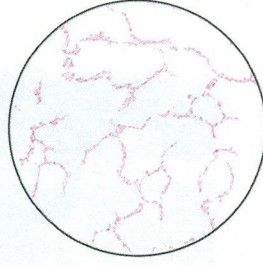
61. The Type II cells in Figure 2 produce what substance?



A



B



C

62.

omit

63. What disease is represented in (B)?

64. What is the predominant cause of this disease?

65. What disease is represented in (C)?

66. What is the predominant cause of this disease?

67. A "blue boater" is a person in whom the primary disorder is

68. A "pink puffer" is a person in whom the primary disorder is

69. Inhaled irritants cause bronchoconstriction by stimulating which nerve?

70.

omit