

Chapter 16 – Respiratory System (RS)

Introduction

1. What is the primary function of the RS?
2. What are 6 other functions of the RS?
3. What is respiration?
4. What are the 4 events of respiration?
5. How is respiration different from breathing?
6. What is cellular respiration?

Organs of the RS

7. What are the 2 divisions of the RS?
8. What is the function of the nose?
9. What are the 3 functions of the nasal cavity?
10. What divides the nasal cavity into right and left sides?
11. What carves the nasal cavity into passageways? What epithelial tissue lines the nasal cavity?
12. How does your body get rid of the “junk” trapped by the cilia of the nasal cavity?

Paranasal Sinuses (PNS)

13. What are PNS?
14. What is their main function?

Pharynx

15. Where is the pharynx?
16. What are its 2 functions?
17. What is the correct order, from superior to inferior, of the 3 subdivisions of the pharynx?

Larynx

18. What 2 organs is the larynx between?
19. What are its 3 functions?
20. What is the difference between the true and false vocal cords?
21. How does the larynx change the pitch of the sounds it produces? The loudness?
22. Compare and contrast the glottis and the epiglottis.

Trachea

23. Where is the trachea?
24. What are the 2 functions of the trachea?

Bronchial Tree

25. What is this?
 26. Put these structures in order from 1st to last
- | | |
|------------------------------|-------------------------|
| alveolar ducts (AD) | alveolar sacs (AS) |
| alveoli (A) | |
| bronchioles (B) | primary bronchus (PB) |
| respiratory bronchioles (RB) | secondary bronchus (SB) |
| terminal bronchioles (TMB) | tertiary bronchus (TTB) |

27. What tissue diminishes as the trachea branches into the bronchus?
28. What tissue is lacking in the bronchioles?
29. What tissue remains in the bronchus and bronchioles?
30. What epithelial tissue lines the alveoli?
31. What is the function of the alveoli?
32. How many alveoli does an adult have?

Lungs

33. Arrange the following structures from deep to superficial.

Heart (H)	Lung (L)
Parietal pleura (PP)	Pericardial cavity (PCC)
Pleural cavity (PC)	Visceral pleura (VP)

34. Compare and contrast visceral and parietal pleura.
35. What is the function of the pericardial cavity?
36. How many lobes do both lungs have?

Breathing Mechanism

37. What is another name for breathing?
38. What is breathing?
39. What are the 2 parts of breathing?
40. What force pushes air into the lungs?
41. Arrange the following events in order from the beginning to the end.
 - a. Alveolar pressure drops
 - b. Atmospheric pressure forces air into the lungs
 - c. Diaphragm contracts
 - d. Diaphragm moves downward
 - e. Thoracic cavity enlarges
42. What additional muscles are involved in breathing?
43. How do they decrease pressure within the lungs?
44. What chemical is secreted inside the alveoli to keep them from collapsing?
45. What are the 4 events that cause expiration?
46. Why is expiration described as a passive process?
47. What is the function of a cough?
48. What is the function of a sneeze?
49. What is the function of a hiccup?
50. What is the function of a yawn?
51. What is the largest respiratory volume/capacity?
52. What is the smallest respiratory volume/capacity?
53. What is the air left behind in the lungs after a normal expiration called?
54. What is the maximum amount of inhaled air called?
55. What is the maximum amount of air you can exhale called?
56. What is the air that stays in the lungs and cannot ever be exhaled called?
57. What 3 respiratory values combine to create vital capacity?
58. What 2 respiratory values combine to create total lung capacity?

59. What 2 respiratory values combine to create functional residual capacity?

Control of Breathing

60. What is the respiratory center?

61. What are its 2 divisions?

62. What is the function of the medullary rhythmicity area? What part of the brain is it in?

63. What are its 2 parts?

64. Which is more active? What is the function of the other?

65. What is the function of the pneumotaxic area? Where is it located?

66. What chemical is monitored and can change breathing rate?

67. Which blood chemical plays a minor role in changing breathing rate?

68. What is the inflation reflex? How does it affect breathing rate?

69. What are 2 more things that can affect breathing rate?

Alveolar Gas Exchange

70. What is the respiratory membrane? What is its function?

71. What causes the movement of gases across the respiratory membrane?

72. Why does CO₂ leave the blood and enter the lungs?

73. Why does oxygen leave the air in the lungs to enter the blood?

74. What are 4 factors that can increase the rate of diffusion across the respiratory membrane?

75. Why does a breathalyzer work?

Gas Transport

76. What part of hemoglobin does oxygen bind to? What is this combo called?

77. What causes the oxygen to be released to the cells?

78. What 3 factors will increase the amount of oxygen released?

79. What is hypoxia?

80. What is the P_{O2} in the blood as the blood arrives at the alveolus? What is the P_{O2} in the blood as the blood leaves the alveolus? Why does O₂ enter the blood at the alveolus?

81. What is the P_{O2} in the blood as the blood arrives at the cells? What is the P_{O2} in the blood as the blood leaves the cells? Why does O₂ leave the blood at the cells?

82. What are 4 things that might cause hypoxia?

83. Why does CO₂ move into the blood?

84. What are the 3 ways that CO₂ is carried in the blood?

85. What is the most common way for CO₂ to be carried in the blood?

86. What is the P_{CO2} in the blood as the blood arrives at the alveolus? What is the P_{CO2} in the blood as the blood leaves the alveolus? Why does CO₂ leave the blood at the alveolus?

87. What is the P_{CO2} in the blood as the blood arrives at the cells? What is the P_{CO2} in the blood as the blood leaves the cells? Why does CO₂ enter the blood at the cells?

Problems of the RS

88. What is a deviated septum?
89. How does anthrax cause death?
90. What causes laryngitis?
91. Why might an infant suffer respiratory distress syndrome?
92. What is emphysema? How does it make breathing difficult? What causes it?
93. What is lung cancer? How does it make breathing difficult? What causes it?
94. What is pneumothorax?
95. How does carbon monoxide poisoning harm you?
96. How does cystic fibrosis harm you?

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