Science Olympiad Anatomy Practice Test

RESPIRATORY SYSTEM – Answers may be found in 2011 Training Handout.
Based on the 2010-2011 rules.

School:		Total Score:	
Team Number:		Denominator:	50

Part I: Respiratory System

Section A. Fill in the blanks.

1. The respiratory system provides _____ and removes _____ from the blood stream.

2. Sound is produced when expired air passes over the _____.

3. The respiratory system controls the pH of _____.

Section B. Fill in the blanks with the correct letter.

A. Pulmonary ventilation
B. External respiration
C. Transport of respiratory gases
D. Internal respiration

4. _____ is the movement of air into the lungs and movement of air out of the lungs.

5. _____ is the movement of oxygen from the lungs to the blood and carbon dioxide from the blood to the lungs.

6. _____ is the transport of oxygen from the lungs to the tissue and transport of carbon dioxide from the tissues to the lungs.

7. _____ is the movement of oxygen from blood to the tissue cells and movement of carbon dioxide from the tissue cells to blood.

Section C. The Nose.

8. What are nasal conchae?

_____

9. What are vibrissae?

_____

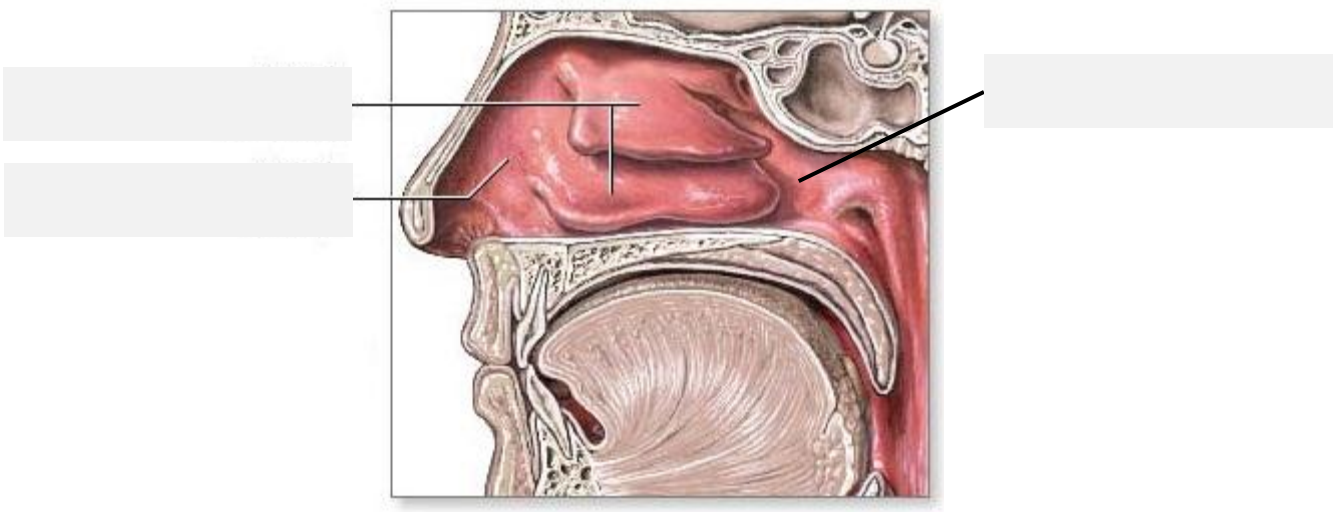
10. What function(s) do capillaries have in the nose?

_____

11. What function(s) does mucus have in the respiratory system?

_____

12. Label each part of the nose.

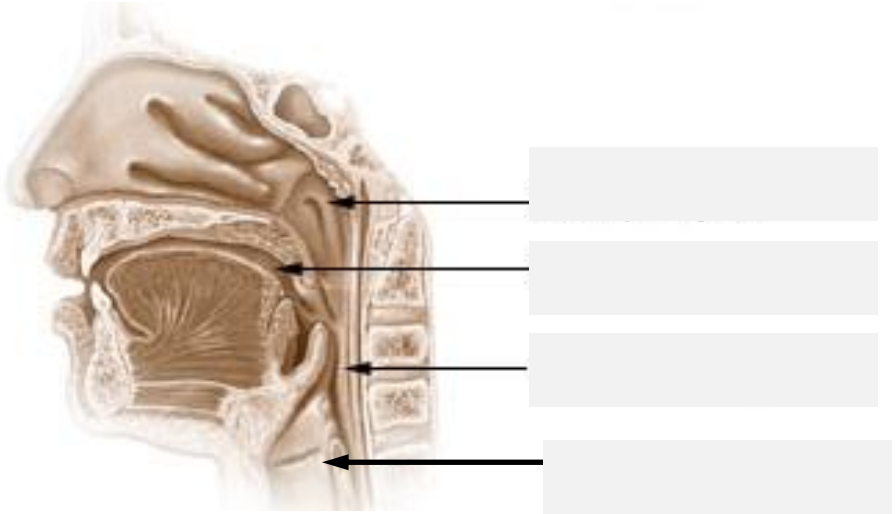


Section D. Pharynx/Larynx

13. What is the pharynx?

_____

14. Label the three regions of the pharynx. Label the larynx.



15. Name the three functions of the larynx.

_____ _____ _____

16. What forms the framework of the larynx?

_____

17. What prevents food and drink from entering the airway when swallowed?

_____

18. What are the true vocal cords and the false vocal cords?

_____

_____

Section E. Trachea/Bronchi/Lungs

19. What reinforces the trachea and keeps it from collapsing when you inhale?

_____

20. What is the function of ciliated pseudostratified epithelium in the trachea?

_____

21. What is the name for the two bronchi that branch off from the trachea?

_____

22. What do the secondary bronchi branch off to?

_____

23. What are alveolar sacs?

_____

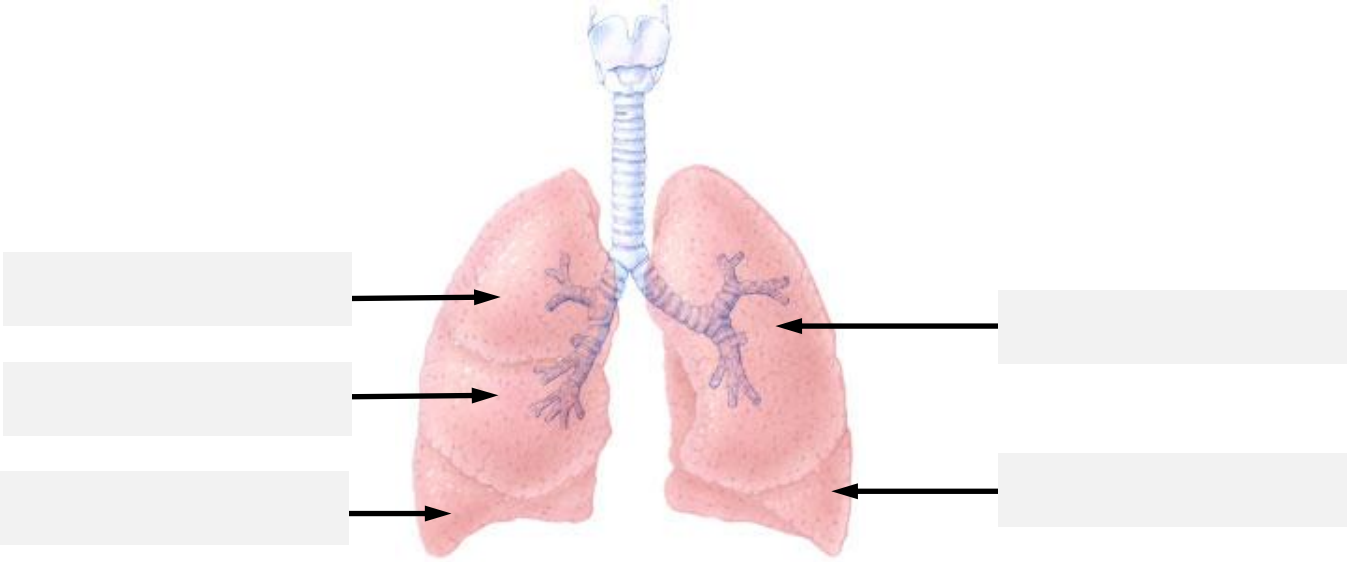
24. What is the function of elastic connective tissue fibers?

_____

25. Why is the left lung smaller than the right lung?

_____

Section F. Label each of the lobes of both lungs with their appropriate names.



Section G. Match each pattern of breathing (letters) to its description (numbers).

A. Apnea	**B.** Dyspnea	**C.** Eupnea
D. Hyperpnea	**E.** Hyperventilation	**F.** Hypoventilation
G. Orthopnea	**H.** Respiratory Arrest	**I.** Tachypnea

26. Accelerated respiration: _____

27. Labored, gasping breathing; shortness of breath: _____

28. Normal, relaxed, quiet breathing: _____

29. Dyspnea that occurs when a person is lying down: _____

30. Permanent cessation of breathing: _____

31. Reduced pulmonary ventilation: _____

32. Temporary cessation of breathing: _____

33. Increased pulmonary ventilation in excess of metabolic demand: _____

34. Increased rate and depth of breathing in response to exercise, pain, or other conditions:

_____

Section H. Measures and Capacities of Pulmonary Ventilation

35. If a person has a tidal volume of 500 ml, an expiratory reverse volume of 1000 ml, and an inspiratory reverse volume of 3100 ml, what is this person's vital capacity?

_____

36. If a person has a total lung capacity of 6000 ml and a vital capacity of 4800 ml, what is their residual volume?

_____

37. Does the inspiratory reverse volume increase or decrease when a person's breathing changes from resting to greater activity?

_____

38. If a person has a total lung capacity of 6000 ml and an inspiratory capacity of 3700 ml, what is their functional residual capacity?

_____

Section J. Match each disorder/disease (letters) to the correct description (numbers).

A. Hypoxia	**B.** Oxygen Toxicity	**C.** Chronic Obstructive Pulmonary Diseases
D. Emphysema	**E.** Asthma	**F.** Chronic bronchitis
G. Lung Cancer	**H.** Acute Rhinitis	**J.** Laryngitis
K. Pneumonia	**L.** Sleep apnea	**M.** Tuberculosis

39. Excess oxygen causing the buildup of peroxides and free radicals: _____

40. Cilia and immobilized and reduced in number, goblet cells increase their production of mucus, and mucus clogs the airways and breeds infection: _____

41. Cancer of the lungs: _____

42. Imflammation of the vocal folds: _____

43. The common cold: _____

44. Alveolar walls break down and the surface area of the lungs is reduced: _____

45. Allergens trigger the release of histamine and other inflammatory chemicals that cause intense bronchoconstriction: _____

46. Cessation of breathing for 10 seconds or longer during sleep: _____

47. Pulmonary infection with Mycobacterium tuberculosis; reduces lung compliance:

_____

48. Deficiency of oxygen in a tissue or the inability to use oxygen: _____

49. Long-term obstruction of airflow and a substantial reduction in pulmonary ventilation:

_____

50. Lower respiratory infection that causes fluid buildup in the lungs: _____