National Cathedral Science Olympiad Invitational Tournament

Anatomy and Physiology ANSWER KEY

December 2017

School Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Team Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Points Awarded: \_\_\_\_\_\_/\_\_\_\_\_\_\_\_\_

Tie Breakers:

Question : Both 2 and 3 correct

Question : 28

Question : 37

Directions: Fill in your response for each question in the space provided on the answer sheet corresponding to that question. Ambiguous or illegible responses will be scored as incorrect. Unless noted otherwise, all questions have a point value of 1.

**DO NOT OPEN THIS PACKET UNTIL INSTRUCTED TO DO SO**

**Multiple Choice Questions = 1 point**

**Respiratory System:**

1. \_\_b\_\_\_

2. \_\_b\_\_\_

3. \_\_a\_\_\_

4. \_\_a\_\_\_

5. \_\_d\_\_\_

6. \_\_d\_\_\_

7. \_\_c\_\_\_

8. \_\_d\_\_\_

9. \_\_a\_\_\_

10. \_\_b\_\_\_

11. \_\_d\_\_\_

12. \_\_c\_\_\_

13. \_\_a\_\_\_

14. \_\_c\_\_\_

15. \_\_a\_\_\_

**Digestive System:**

16. \_\_d\_\_\_

17. \_\_d\_\_\_

18. \_\_b\_\_\_

19. \_\_c\_\_\_

20. \_\_c\_\_\_

21. \_\_a\_\_\_

22. \_\_c\_\_\_

23. \_\_d\_\_\_

24. \_\_d\_\_\_

25. \_\_c\_\_\_

26. \_\_a\_\_\_

27. \_\_b\_\_\_

28.

Although the same four tissue coats form all organs of the alimentary tract, their structures vary in different organs.

* The mucosa of the esophagus is composed of tough, stratified abrasion-resistant epithelium. The mucosa of the remainder of the tract is a delicate layer of simple columnar epithelium designed for absorption.
* In the stomach region, the mucosa is lined with thousands of microscopic gastric glands that secret gastric juice and hydrochloric acid. When the stomach is empty, its mucous lining lies in folds called rugae.
* The mucous lining of the small intestine, like that of the stomach, contains thousands of microscopic glands. These are called intestinal glands, and they secrete intestinal digestive juice. The intestinal lining is made up of multiple circular folds called plica. These folds are covered with thousands of tiny “fingers” called villi. Inside each villus lies a rich network of blood capillaries that absorb the products of digestion. No villi are present in the mucosa of the large intestine.
* As a result, less surface area is available for absorption and the efficiency and speed of movement of substances through the wall of the large intestine is much lower than in the small intestine.

**Immune System:**

29. \_\_a\_\_\_

30. \_\_d\_\_\_

31. \_\_a\_\_\_

32. \_\_d\_\_\_

33. \_\_c\_\_\_

34. \_\_a\_\_\_

35. \_\_d\_\_\_

36. \_\_d\_\_\_

37.

-Neutralization (neutralizes some toxins and prevents binding to body cells)

-Opsonization (mark antigens for phagocysosis)

-Activate complement system (self explanatory)

-Agglutination (link them together, also enhances phagocytosis)