**2013 ANATOMY (B)**

**Sample Tournament**

**Station A:**

**Use the diagram in answering**

**Questions 1-5.**

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**1. What is the function of the *cerebellum*?**

 **2. What is the function of the *cerebrum*?**

 **3. What is the function of the *thalamus*?**

 **4. What is the function of the *medulla*?**

 **5. Which parts make up the *brainstem*?**

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**Station B:**

**6. Where are the rods and cones located?**

 **7. Which layer has dark pigment to absorb extra light and keep the inside of the eye dark?**

 **8. What part has the pigment for eye**

 **color?**

 **9. What substance keep the eye from collapsing?**

**10. What type of eye disorder is caused by the eyeball being too long? (nearsightedness or farsightedness)**

**Station C:**

**Examine the diagram and answer the following questions.**



 **11. What is the role of the outer ear?**

 **12. How do the ear drum and the three bones of the middle ear help with the transmission of sound?**

 **13. What fills the cochlea of the middle ear to transmit sound?**

 **14. What type of cells are the receptors for sound in the cochlea?**

**15. What is the role of the Eustachian tube?**

**Station D:**

**Examine the information provided and answer the questions.**



# Olfactory-Smell

**16. What type of receptors are taste and smell receptors? (what do they detect)**

**17. Where are most of your taste buds located?**

**18. Where are the smell receptors located and why does a cold affect the taste of food?**

**19. Why do hot food taste better than cold foods?**

 **20. Why is smells so strongly attached to emotion and memory of events?**



**Station E:**

**21**. Give the name and function of the part

 indicated by the letter  **F**.

**22**. Give the name and function of the part

 indicated by the letter **C**.

**23**. Give the name and function of the part

 indicated by the letter **A**.

**24**. Give the name and function of the part

 indicated by the letter **D**

**25**. Give the name and function of the part

 indicated by the letter **H**

**Station F:**



**26.** How many teeth does this adult have?

**27.** Many individuals have their “wisdom teeth”

 pulled. Which letter represents these teeth?

**28.** What are the glands labeled “**G**” and what is

 their function?

**29.** Give the letter from the diagram for the canine

 teeth. How are they modified in carnivores?

**30.** Give the name and function of structure **“F”**

**Station G:**

Examine the Data on Digestion of a Meal and answer the following questions.

A person ate dinnerat 6 PM on Monday and the progress of the food through the

digestive system was recorded.



 **31.** How many hours was the food from this meal in the digestive system?

 **32.** How many hours was the food in the stomach? What percent of the total time

 was spent in the stomach?

 **33.** Where does most of the digestion of food take place? What percent of the total time

 was spent in this part of the digestive system?

 **34.** In what two parts of the digestive system does the food spend the least amount of time?

 About how many minutes are spent in these two regions combined?

 **35.**  In what region of the digestive system is digestion aided by bacteria for

 additional extraction and absorption of nutrients, salts, and water?

 What percent of the total time is spent in this region?

**Station H:**

**36. What three areas of the alimentary canal are involved in mechanical digestion?**

**37. What process involving muscle contraction allows the food to be moved through the digestive system?**

**38. What two organs do most of the chemical digestion of food?**

**39. Where does most of the absorption of nutrients take place?**

**40. Where does most of the water absorption of water and formation of feces take place?**

**Station I:**

**Explain the effects of the following drugs on the nervous system .**

**41. alcohol**

**42. caffeine**

**43 nicotine .**

**Describe the two types of fiber and explain their role in digestion.**

**44.**

**45.**

**Station J:**

**For each of the following conditions, explain the cause and symptoms.**

**46. Asthma**

**47. Pneumonia**

**48. Lactose intolerance**

**49. Diarrhea**

**50. Stomach ulcer**

**Practice Exercise:**

**Develop Stations which collect data, interpret actual experimental data, and/or address questions related to the function of the skeletal and muscular systems in health and disease. Formulate questions and answers related to these stations.**

 **2013ANATOMY (B)** - **Sample Tournament – Answer Key**

**Station A**

 **1. Muscle coordination, balance, muscle tone**

 **2. Conscious activity**

 **3. Brain’s switchboard**

 **4. Vital reflexes as heart beat, respiration**

 **5. Medulla, pons, and midbrain**

**Station B**

 **6. Retina**

 **7. Choroid**

 **8. Iris**

 **9**. **Vitreous humor**

**10. nearsightedness – Myopia**

**Station C:**

**11. the outer collects sound and funnel it toward the eardrum**

**12. the eardrum and ossicles vibrate to transmit the sound to the inner ear**

**13. the cochlea is filled with fluid with vibrates like waves**

**14. the receptor are special hair cells with are stimulated by the fluid waves and initiate an impulse**

**15.**  **the Eustachian tube helps to equalize pressure on both sides of the eardrum**

**Station D:**

**16. Taste and Smell are chemical receptors**

**17. Most taste buds are on the tongue but some line the surface of the mouth**

**18. Smell receptors are on the top of the nose and mucus from a cold can cover them**

 **so odor chemicals cannot get to them thus reducing ability to smell and smell is perceived as**

 **part of taste**

**19. Hot food emit more odors than cold food and smell is perceived as part of taste**

**20. The brain region for smell is close to the emotion center (limbic system)**

**Station E:**

**21. Anus – expels undigested waste (muscles control removal & prevent leakage)**

**22. Stomach – high pH – protein digestion begins – food is reduced to liquid**

**23. Mouth – chewing food into a ball – start starch digestion**

**24. Small intestine – most of enzymatic digestion and absorption of nutrients**

**25. Large intestine – bacterial help to finish digestion and reabsorb water.**

**Station F:**

**26. 32 teeth**

**27. E (wisdom teeth)**

**28. Salivary gland produces saliva as lubricant, antiseptic, and begins starch digestion**

**29. B – canine are long and pointed in carnivores**

**30. tongue – manipulates food into ball for swallowing and helps with speech**

**Station G:**

**31. 20 hours**

**32. about 4 hours**

**33. small intestine – about 58% (50 – 60 %)**

**34. Mouth and esophagus – about 15 min or ¼ hour**

**35. Large Intestine – about 14 % ( 10-15%)**

**Station H:**

**36. mouth, stomach, and small intestine**

**37. peristalsis**

**38. stomach and small intestine**

**39. small intestine**

**40. large intestine**

**Station I:**

**41. Alcohol -** central nervous system **depressant** – cell membranes are highly permeable to alcohol so once in the bloodstream it can diffuse into almost all body tissues. It is absorbed in the stomach so it gets into the blood stream quickly and slows down function of the nervous system

**42. Caffeine --** acts as a central nervous system **stimulant -** caffeine suppresses melatonin for up to 10 hours and also promotes adrenalin. Melatonin is strongly associated with quality sleep, while adrenalin is the neurotransmitter associated with alertness

**43. Nicotine - -** small doses of nicotine have a stimulating action on the central nervous system – it is

 highly addictive nicotine's effects on the brain cause an increased release of neurotransmitters associated with pleasure. The brain quickly adjusts to repeated nicotine consumption by

 decreasing the amount of neurotransmitters released. The effect of this increased tolerance is that the smoker must continue to use nicotine in order to avoid the feelings of discomfort associated with withdrawal from the drug. Irritability and anxiety often ensue during nicotine withdrawal

### 44.-45. Role of Fiber

### There are two types – insoluble fiber and soluble fiber

### *Insoluble fiber* is a type of fiber which cannot be dissolved in water

### Insoluble fiber draws water to the intestine, increasing the bulk and softness of waste products

### *Soluble fiber* which can be dissolved in water

### Soluble fiber can be digested slowly and it slows the digestive process and keeps the stomach fuller longer leaving the body feeling full for a longer period of time

### Digestion and absorption of carbohydrates are slower so that glucose (sugar) in food enters the bloodstream more slowly, which keeps blood sugar on a more even level

* **The slow absorption of sugar gives the body an opportunity to regulate blood sugar levels**

**Station J:**

 **46. Asthma - allergens trigger the release of histamine and other inflammatory chemicals that cause**

 **intense bronchoconstriction**

 **47. Pneumonia - lower respiratory infection that causes fluid build up in the lungs**

### 48. Lactose Intolerance - the inability to digest and metabolize ****lactose****, a sugar found in milk caused by a lack of the enzyme lactase in the digestive system

### 49. Diarrhea – loose, watery, and frequent stools or bowl movements – prolonged it can cause dehydration

### 50. Stomach l ulcers – open sores or lesions found in the stomach - most ulcers (90 percent of duodenal ulcers) develop as a result of infection with a bacterium called Helicobacter pylori (H. pylori).