**BIOLOGY**

**Topic: 2 & 3**

*Human Health*

***Mini – Summative #2***

**Directions:** **Select the lettered choice that best answers each question.**

***Use the diagram below to answer questions 1&2***

2

 ******

1

3

5

4

1. What lobe is designated by **number 2**?
2. Frontal
3. Parietal
4. Occipital
5. Temporal
6. What lobe is designated by **number 3**?
7. Frontal
8. Parietal
9. Occipital
10. Temporal

**The diagram below shows a magnetic resonance image (MRI) of a child with a brain tumor. The tumor is pointed out with an arrow.**

****

1. What part of the brain is the tumor most closely affecting?
2. Pons
3. Cerebellum
4. Occipital Lobe
5. Temporal Lobe

**The diagram below shows the human brain with two structures highlighted.**

 **Parts of the Human Brain**

**Structure Y**

**Structure X**

1. Which of the following correctly identifies Structure X and Structure Y?
2. Structure X is the pons and Structure Y is the cerebrum
3. Structure X is the cerebrum and Structure Y is the pons
4. Structure X is the cerebellum and Structure Y is the cerebrum
5. Structure X is the cerebrum and Structure Y is the cerebellum
6. Hypercoagulability is a disorder of the circulatory system in which more viscous blood is produced

than normal. What are the effects of hypercoagulability on the circulatory system?

1. Viscous blood means thinner blood, resulting in faster blood flow, allowing more nutrients and oxygen to be distributed to the cells
2. Viscous blood means thinner blood, resulting in faster blood flow, allowing for the release of excess endorphins, which stimulates the heart
3. Viscous blood means thicker and stickier blood, resulting in slower blood flow, allowing the heart to work less due to lower volume of blood
4. Viscous blood means thicker and stickier blood, resulting in slower blood flow, allowing less nutrients and oxygen to be distributed to the cells
5. Blood flows through many vessels in the human body. Which of the following factors is most likely to determine how fast blood flows through a vessel?
6. The age of the vessel
7. The diameter of the vessel
8. The vessel's distance from the brain
9. The amount of blood plasma in the vessel
10. Which line in the graph below best illustrates an effect of the carbon dioxide level in the blood on breathing rate before, during and after a period of exercise?
11. A
12. B
13. C
14. D
15. According to the diagram in question #7, what is the **dependent variable**?
16. Blood
17. Exercise
18. Carbon dioxide
19. Breathing rate
20. Which of the following best describes the connection between cardiovascular disease and age?
21. As people age, blood pressure decreases leading to more cardiovascular disease
22. As people age, the heart becomes more efficient with each pump, increasing cardiac output
23. As people age, plaque builds up in the arteries increasing vessel resistance, which leads to disease
24. As people age, their blood vessels become more elastic leading to less cardiovascular disease
25. Lynne smokes two packs of cigarettes a day, while Marc has never smoked a cigarette a day in his life. Which one of the following statements is true when comparing Lynne, actively smoking, to Marc?
26. Lynne’s rate of blood flow is slower because she is respiring slower due to her smoking
27. Marc’s rate of blood flow is slower because his arteries are not constricting due to smoking
28. Lynne and Marc’s rate of blood flow are not affected - smoking has no effect on the rate of blood flow
29. Lynne’s rate of blood flow is faster because she is able to breathe a greater percentage of oxygen
30. What is the body's first line of defense against infection by foreign organisms?
31. The skin
32. Antibodies
33. Lymph nodes
34. White blood cells
35. What is immunity?
36. The body's ability to produce the "fight or flight" response
37. The body's ability to use the endocrine system to fight disease
38. The body's ability to regulate homeostasis through feedback loops
39. The body's ability to produce cells that inactivate foreign cells or substances

**The p53 gene codes for the p53 protein that locates DNA errors for cellular repair. The diagram below shows the relationship among possible environmental influences, the p53 gene, and cancer**.

1. Which of the following statements best describes the relationships among possible environmental influences, the p53 gene, and cancer?
2. Mutations in the p53 gene increase environmental influences that can cause certain cancers
3. Increased levels of p53 protein, rather than environmental influences, can cause certain cancers
4. Environmental influences can lead to mutations in the p53 gene, which can cause certain cancers
5. Genes such as p53 are less casual than environmental influences in stimulating certain cancers
6. Vaccines are given to patients to prevent disease. After the vaccine is administered, what response to the vaccine is triggered in the body?
7. Secretion of antigens by lymphocytes
8. Production of antibodies providing immunity
9. Absorption of histamines throughout the body
10. Production of temporary resistance to the disease
11. After an initial infection, B-cells recognize the measles virus. How is this helpful in human immune response?
12. The B-cells transfer this recognition to T-cells, which will then devour the viruses.
13. The B-cells produce antibodies more quickly if the measles virus is encountered again
14. The B-cells more quickly recognize and respond to any other virus that invades the body
15. The B-cells use this recognition to defend the body against other pathogens, such as bacteria
16. Although vaccines cannot be used to treat a person who is sick, they can help to prevent infections. Vaccinations tell the body to create "memory cells", which will function later to create antibodies against certain pathogens. When a person is vaccinated, what are they injected with?
17. Live, inactive viruses
18. Antibodies to a disease bacterium
19. Blood from a person who has had the disease
20. Weakened viruses or antigens from the virus
21. Which of the following describes a way that a person's health can be affected by heredity?

A. A person with a family history of obesity is more likely to catch a common cold

B. A person with a family history of high blood pressure is more likely to have heart disease

C. A person with a family history of obesity is less likely to enroll in a weight loss plan

D. A person with a family history of cancer is less likely to be screened for cancer

1. Many species of bacteria have become resistant to antibiotics because antibiotics have been so widely used. Now, bacteria that used to be killed by antibiotics are more difficult to treat. What is the best way to proceed in dealing with this public health problem?
2. Antibiotics should no longer be used
3. Antibiotics should only be prescribed to people with bacterial infections
4. Anti-viral medications should now be used instead of antibiotics
5. Antibiotics should be made available to anyone without a prescription
6. How do human diseases caused by bacteria and diseases caused by viruses react to antibiotics?
7. Both respond to antibiotics
8. Neither responds to antibiotics
9. Viral diseases respond to antibiotics; bacterial diseases do not
10. Bacterial diseases respond to antibiotics; viral diseases do not.

**Carmen conducted an experiment to determine if listening to different types of music would affect a person’s pulse. Her hypothesis was that pulse rate would change with different types of music. Each person listened to seven different selections of music for 30 seconds each. Each person’s pulse was taken before the music and then after each 30-second interval of music. The pulses were taken again after the music selections were completed. Based on her experiment, Carmen concluded that a person’s pulse rate changed when the person listened to different types of music.**

1. Which component is missing from Carmen’s experiment?
2. A question
3. A hypothesis
4. A control group
5. A description of the experiment