**Respiration, Circulation, Blood and Immunity Review**

**Respiration and Muscles – Chapter 9**

1. What characteristics are present in any organism for gas exchange to occur?
2. Describe the role of the diaphragm in breathing.
3. Trace the path of oxygen through the respiratory system starting from the atmosphere to the tissues of the body.
4. Describe the role of hemoglobin in the transport of oxygen.
5. Describe the role of hemoglobin in maintaining the pH of the blood.
6. What are a) the two chemoreceptors for breathing?

 b) Where is each located?

 c) Which is most sensitive and explain?

1. Once the chemoreceptor detects high levels of CO2 , to which part of the respiratory system does it send it’s signal?
2. During inhalation, what occurs in terms of air pressure inside the chest due to the movement of the intercostal muscles and the diaphragm?
3. Describe how oxygen gas diffuses from the alveoli into the capillaries and why?
4. What are the three types of muscles and where is each type located?
5. The bicep and the triceps muscles work to both bend and straighten the arm at the elbow.
6. Describe what happens when the bicep muscle contracts.
7. What is the effect on the elbow joint when the bicep contracts?
8. What does the triceps muscle do when the bicep muscle contracts?
9. What are the bicep and triceps muscles called?
10. What kind of nervous signal is the bicep muscle receiving?
11. What kind of nervous signal is the triceps muscle receiving?

**Blood and Immunity – Chapter 11**

1. What are the roles of the following blood components:
2. Plasma –
3. Platelets –
4. Red blood cells –
5. White blood cells –
6. What are the scientific names for:
7. red blood cells
8. white blood cells?
9. What are some of the characteristics of erythrocytes?
10. Where are all blood cells formed?
11. What is anemia?
12. Why would someone have a high white blood cell count?
13. Fill in the following chart about blood types:

|  |  |  |  |
| --- | --- | --- | --- |
| Blood type | Antigen on Red Blood Cell | Antibodies in plasma | Rh Factor |
| A+ |  |  |  |
| B- |  |  |  |
| AB+ |  |  |  |
| O- |  |  |  |

1. Give 3 examples of the body’s first line of defense.
2. What is an antigen?
3. What is an antibody?
4. Which type of white blood cell:
5. Attacks invaders through phagocytosis?
6. Produces antibodies?
7. Remembers the invader if the person would be infected again?
8. Kills invaders and the human cells they occupy?
9. Signals the immune system to shut down the immune response?
10. Give two examples of non-specific immune response (second line of defence)

**Circulation – Chapter 10**

1. Compare the two types of vessels in the circulatory system

|  |  |
| --- | --- |
| Arteries | Veins |
|  |  |

1. What are the main functions of the circulatory system?
2. Describe the unique characteristics of capillaries.
3. Outline the flow of blood as it enters the heart from the inferior and superior vena cava, through the pulmonary circuit to the lungs and then as it enters the heart through the pulmonary veins through the systemic circuit and out the aorta. ***(list all vessels, chambers of the heart and valves)***
4. Describe what happens to blood vessels when a person gets
5. Too hot.
6. Too cold.
7. How is cardiac output calculated?
8. What is diastolic blood pressure a measure of?
9. What is systolic blood pressure a measure of?
10. What is considered normal blood pressure?
11. What are the functions of the lymphatic system?
12. How are the lymph vessels like veins?

**Diagrams:**

**Heart**

*Label the following using the list of terms:*

*right atrium left atrium right ventricle left ventricle*

*aorta pulmonary veins pulmonary arteries right AV valve*

*superior vena cava inferior vena cava*

*left AV valve right semi-lunar valve left semi-lunar valve*

 

Respiratory System

*Label the following using the list of terms:*

*Bronchioles trachea nasal cavity intercostal muscle*

*Pharynx bronchus larynx epiglottis*

*Diaphragm alveolus capillary network*

 

 