**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Close Cardiovascular System Revision-Worksheet**

1.Fill in the empty spaces:

 Blood consists of a liquid portion- \_\_\_\_\_\_\_ and blood cells- \_\_\_\_\_\_\_\_\_\_\_,\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.There are 4 blood types:\_\_\_\_,\_\_\_\_\_,\_\_\_\_\_ and \_\_\_\_\_.According to the rule for blood transfusions, people with blood type 0 can be called universal \_\_\_\_\_\_\_\_\_\_\_\_, whereas the people with AB type are called universal \_\_\_\_\_\_\_\_\_\_\_\_.There is another blood factor called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.The main function of red blood cells is to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and their form is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.They have the molecule \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that carry its function. This protein form compounds with oxygen called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and with carbon dioxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The main function of white blood cells is to build up the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, performing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and forming \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Platelets are significant for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Each foreign substance to an organism that provides formation of antibodies is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. There are two types of natural immunity \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_. The first type is transmitted from \_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_ giving \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The second type is a result of suffered \_\_\_\_\_\_\_\_\_\_ . The artificial immunity is acquired through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ which can be also two types: with \_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_ antigens. The cardiovascular system includes the \_\_\_\_\_\_\_\_\_\_\_to pump blood and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.The 3 layers of the heart wall include the inner lining, called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_, the thick muscular \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and the outer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The heart has 4 chambers, 2 upper \_\_\_\_\_\_\_\_\_ and 2 lower \_\_\_\_\_\_\_\_\_\_\_. Between each upper and lower chamber on the left side of the heart is a valve called \_\_\_\_\_\_\_\_\_ valve (also called the **mitral** valve). The one between the chambers on the right is the\_\_\_\_\_\_\_\_\_\_\_\_\_ valve. All four valves function to prevent \_\_\_\_\_\_\_\_\_\_ of blood. Atria contract, then as they relax, ventricles contract. Contraction is called \_\_\_\_\_\_\_\_ and relaxation is called \_\_\_\_\_\_\_\_. When the ventricles finish contracting, the entire heart remains relaxed so it can fill with blood before contracting again. The term for one complete contraction/relaxation is the \_\_\_\_\_\_\_\_\_\_\_\_. The amount of blood pumped by the heart each minute is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_. The vessel type with the thickest walls is the \_\_\_\_\_\_\_\_\_\_. The biggest artery is called \_\_\_\_\_\_\_\_\_. Usually the vessels are build up of three layers \_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ tissue. The vessel type with thinnest walls is the \_\_\_\_\_\_\_\_\_\_\_. The walls of capillaries are only one cell layer thick, to allow for easy exchange of nutrients (including oxygen) and wastes (including carbon dioxide). The direct reflection of heart activity and changes in the case of physical activity or strong emotions is called \_\_\_\_\_\_\_\_\_\_\_\_\_.

**World Box**

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**Cardiovascular System Revision – Answer key**

 Blood consists of a liquid portion- plasma and blood cells- erythrocytes, leucocytes and platelets. There are 4 blood types: A, B, AB and O. According to the rule for blood transfusions, people with blood type 0 can be called universal donors, whereas the people with AB type are called universal recipients. There is another blood factor called Rh. The main function of red blood cells is to transport oxygen and their form is double flattened. They have the molecule hemoglobin that carry its function. This protein form compounds with oxygen called oxyhemoglobin and with carbon dioxide carbaminohemoglobin. The main function of white blood cells is to build up the immunity, performing phagocytosis and forming antibodies. Platelets are significant for blood clotting. Each foreign substance to an organism that provides formation of antibodies is called antigen. There are two types of natural immunity innate and acquired. The first type is transmitted from mother to child giving antibodies. The second type is a result of suffered disease. The artificial immunity is acquired through vaccines which can be also two types: with live or dead antigens. The cardiovascular system includes the heart to pump blood and the blood vessels. The 3 layers of the heart wall include the inner lining, called the endocardium, the thick muscular myocardium and the outer epicardium. The heart has 4 chambers, 2 upper atria and 2 lower ventricles. Between each upper and lower chamber on the left side of the heart is a valve called bicuspid valve (also called the mitral valve). The one between the chambers on the right is the tricuspid valve. All four valves function to prevent backflow movement of blood. Atria contract, then as they relax, ventricles contract. Contraction is called systole and relaxation is called diastole. When the ventricles finish contracting, the entire heart remains relaxed so it can fill with blood before contracting again. The term for one complete contraction/relaxation is the heart cycle. The amount of blood pumped by the heart each minute is called cardiac output. The vessel type with the thickest walls is the artery. The biggest artery is called aorta. Usually the vessels are build up of three layers: epithelium, connective and muscular tissue. The vessel type with thinnest walls is the capillary. The walls of capillaries are only one cell layer thick, to allow for easy exchange of nutrients (including oxygen) and wastes (including carbon dioxide). The direct reflection of heart activity and changes in the case of physical activity or strong emotions is called pulse.