Assigments

What is an example of a positive feedback system in the human body? After an initiation stimulus, if the body tends to act in favorable way towards the signal and carries out the same effect as the initial stimulus it can be referred to as positive feedback (Clark 2005 p79). The example of blood clotting is the an example of the positive feedback system in the human body which becomes activated immediately after the damage to the blood vessels in the human body. This positive feedback occurs mainly via the function of the platelets. When the platelets come in close vicinity to the site of damage in the vessels, they start to change their shape and become swollen. At the same time, they contract to release essential substances which make them adhere to the damaged wall and in particular to the collagen in the walls of the damaged vessels. They also tend to release ADP. This substance further assists the platelets in their function and tend to stimulate the platelets which lie close to the damaged vessel by making them active. These platelets tend to cluster together and come and join the initial platelets that adhered to the vessel wall that was damaged. This results in the formation of a platelet plug which closes the damaged vessel. At the same time, there is further release of clotting factors. This mechanism indicates the positive feedback system of the human body where the activation of one platelet further stimulates the cascade and results in more stimulation and the formation of a platelet plug (Lauralee 2006 p322). Works Cited Top of Form Clark, Robert K. Anatomy and Physiology: Understanding the Human Body. Sudbury, Mass: Jones and Bartlett Publishers, 2005. Print. Bottom of Form Top of Form Sherwood, Lauralee. Fundamentals of Physiology: A Human Perspective. Belmont, Calif: Thomson Learning distributor, 2006. Print. Bottom of Form How do the isotopes of a single

element differ from each other? Give an example of a radioactive isotope that can be used as important medical diagnostic tool. An element basically comprises of atoms. An atom further comprises of a nucleus that is placed centrally and electrons that revolve around the central nucleus. The nucleus is made up of protons as well as neutrons. An isotope is basically different forms of the same element which consist of the same number of electrons and protons but the only difference lies in the number of neutrons. The neutrons of the isotopes of a single element vary in number. Because of this variation in the number of protons, the mass of the isotopes of the same element also differs. This is because the mass of an elements is determined by the addition of the neutrons and the protons. The examples of isotope is that of carbon which has three isotopes which include carbon-12, carbon-13 and carbon-14. As the number of electrons for all the isotopes is same, therefore there is no variation in the chemical properties of the isotopes of the same element. But owing to the different masses of these isotopes, the rates of the reactions of the isotopes of the same element differ from each other. The bonds that the isotopes of the same element form with other elements is also different from each other due to the different masses. Also some isotopes of the same element are radioactive whereas other isotopes exist in stable forms. This is true of carbon as carbon-14 is radioactive and undergoes the process of decay whereas carbon-12 and carbon-13 are not radioactive and are hence stable (Lasen 2010 p446, Brown et al 2011 p80). Radioactive iodine-123 is an example of a radioactive isotope that is an important medical diagnostic tool. This isotope is basically taken up by the thyroid gland and helps in assessing the function of the thyroid gland by measuring the amount of iodine that is taken up by the gland (Pilling 1999

p132). Works Cited Top of Form Brown, Terry, & Brown, Keri A.. Biomolecular Archaeology: An Introduction. Blackwell Pub, 2011. Print. Bottom of Form Top of Form Larsen, Clark S. A Companion to Biological Anthropology. Chichester, U. K: Wiley-Blackwell, 2010. Print. Top of Form Pilling, Gwen. Salters Higher Chemistry. Oxford: Heinemann, 1999. Print. Bottom of Form Bottom of Form