A&P 18 Cardiovascular System Blood Essay

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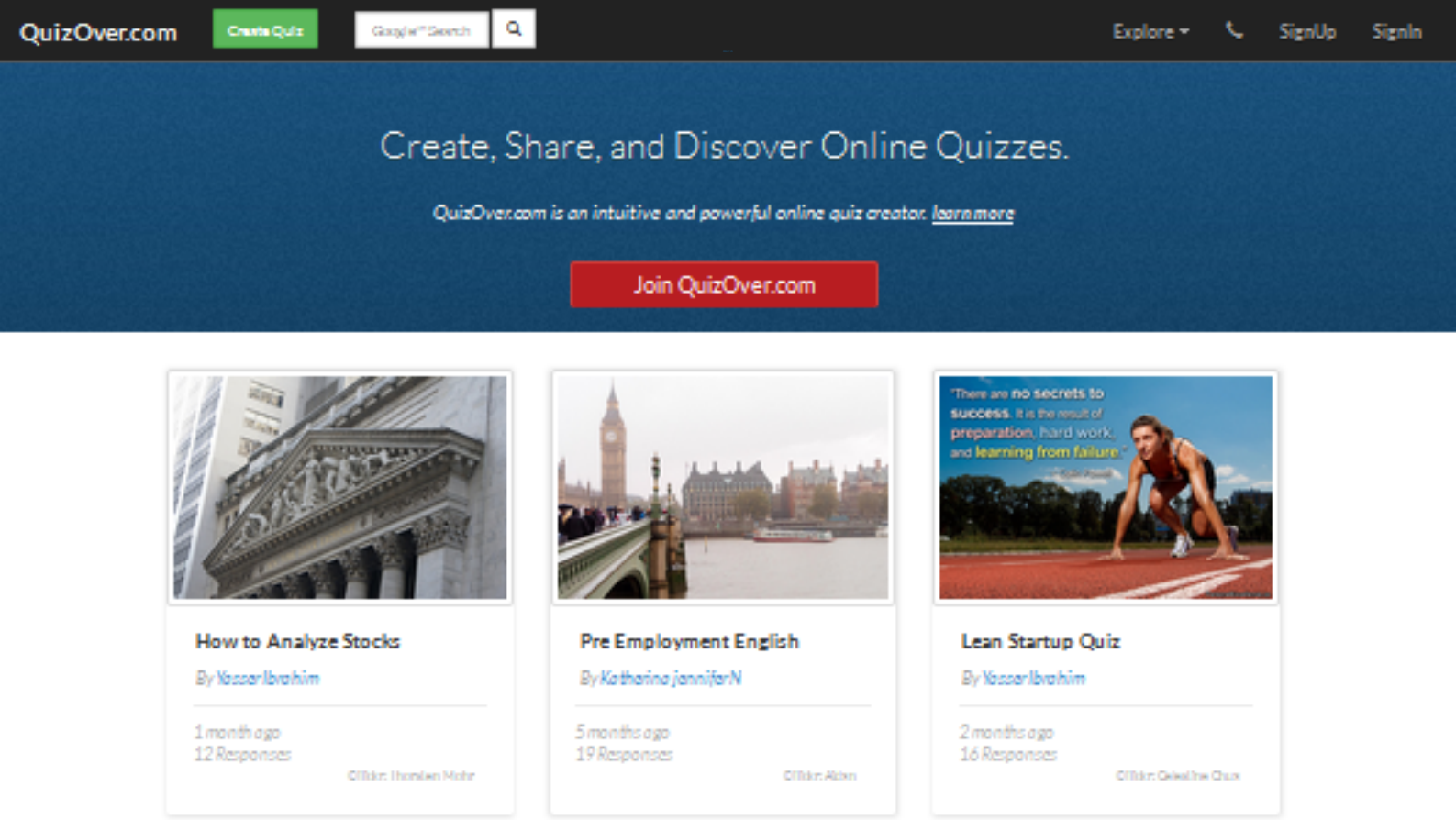

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4. Chapter: A&P 18 Cardiovascular System Blood Essay

1. A&P 18 Cardiovascular System Blood Essay Questions

4.1.1. Visit this site (http://openstaxcollege.org/l/normallevels) for a l...

Author: OpenStax College

Visit this site (http://openstaxcollege.org/l/normallevels) for a list of normal levels established for many of the substances found in a sample of blood.

Serum, one of the specimen types included, refers to a sample of plasma after clotting factors have been removed.

What types of measurements are given for levels of oxygen in the blood?

- There are values given for percent saturation, tension, and blood gas, and there are listings for different types of hemoglobin.

Check the answer of this question online at QuizOver.com:
Question: Visit this site http://openstaxcollege OpenStax College Anatomy Quest

4.1.2. Watch this video (http://openstaxcollege.org/l/doping) to see docto...

Author: OpenStax College

Watch this video (http://openstaxcollege.org/l/doping) to see doctors discuss the dangers of blood doping in sports.

What are the some potential side effects of blood doping?

- Side effects can include heart disease, stroke, pulmonary embolism, and virus transmission.

Check the answer of this question online at QuizOver.com:
Question: Watch this video http://openstaxcollege OpenStax College Anatomy

4.1.3. Figure 18.13 Are you able to recognize and identify the various for...

Author: OpenStax College

Figure 18.13 Are you able to recognize and identify the various formed elements? You will need to do this is a systematic manner, scanning along the image.

The standard method is to use a grid, but this is not possible with this resource.

Try constructing a simple table with each leukocyte type and then making a mark for each cell type you identify.

Attempt to classify at least 50 and perhaps as many as 100 different cells.

Based on the percentage of cells that you count, do the numbers represent a normal blood smear or does something appear to be abnormal?

- Figure 18.13 This should appear to be a normal blood smear.

Check the answer of this question online at QuizOver.com:
Question: Figure 18.13 Are you able to recognize OpenStax College Anatomy Quest

4.1.4. View these animations (http://openstaxcollege.org/l/coagulation) to...

Author: OpenStax College

View these animations (http://openstaxcollege.org/l/coagulation) to explore the intrinsic, extrinsic, and common pathways that are involved the process of coagulation.

The coagulation cascade restores hemostasis by activating coagulation factors in the presence of an injury.

How does the endothelium of the blood vessel walls prevent the blood from coagulating as it flows through the blood vessels?

- Clotting factors flow through the blood vessels in their inactive state.
  The endothelium does not have thrombogenic tissue factor to activate clotting factors.

Check the answer of this question online at QuizOver.com:
Question: View these animations http://openstaxcollege OpenStax College Anatomy

4.1.5. A patient's hematocrit is 42 percent. Approximately what percentage...

Author: OpenStax College

A patient's hematocrit is 42 percent. Approximately what percentage of the patient's blood is plasma?

- The patient's blood is approximately 58 percent plasma (since the buffy coat is less than 1 percent).

Check the answer of this question online at QuizOver.com:
Question: A patient's hematocrit is 42 percent. OpenStax College Anatomy Quest

4.1.6. Why would it be incorrect to refer to the formed elements as cells?

Author: OpenStax College

Why would it be incorrect to refer to the formed elements as cells?

- The formed elements include erythrocytes and leukocytes, which are cells (although mature erythrocytes do not have a nucleus); however, the formed elements also include platelets, which are not true cells but cell fragments.

Check the answer of this question online at QuizOver.com:
Question: Why would it be incorrect to refer to the OpenStax College Anatomy

4.1.7. True or false: The buffy coat is the portion of a blood sample that...

Author: OpenStax College

True or false: The buffy coat is the portion of a blood sample that is made up of its proteins.

- False. The buffy coat is the portion of blood that is made up of its leukocytes and platelets.

Check the answer of this question online at QuizOver.com:
Question: True or false: The buffy coat is the OpenStax College Anatomy Quest

4.1.8. Myelofibrosis is a disorder in which inflammation and scar tissue f...

Author: OpenStax College

Myelofibrosis is a disorder in which inflammation and scar tissue formation in the bone marrow impair hemopoiesis. One sign is an enlarged spleen. Why?

- When disease impairs the ability of the bone marrow to participate in hemopoiesis, extramedullary hemopoiesis begins in the patient's liver and spleen.
  This causes the spleen to enlarge.

Check the answer of this question online at QuizOver.com:
Question: Myelofibrosis is a disorder in which OpenStax College Anatomy Quest

4.1.9. Would you expect a patient with a form of cancer called acute myelo...

Author: OpenStax College

Would you expect a patient with a form of cancer called acute myelogenous leukemia to experience impaired production of erythrocytes, or impaired production of lymphocytes? Explain your choice.

- The adjective myelogenous suggests a condition originating from (generated by) myeloid cells.
  Acute myelogenous leukemia impairs the production of erythrocytes and other mature formed elements of the myeloid stem cell lineage.
  Lymphocytes arise from the lymphoid stem cell line.

4.1.10. A young woman has been experiencing unusually heavy menstrual bleed...

Author: OpenStax College

A young woman has been experiencing unusually heavy menstrual bleeding for several years.

She follows a strict vegan diet (no animal foods). She is at risk for what disorder, and why?

- She is at risk for anemia, because her unusually heavy menstrual bleeding results in excessive loss of erythrocytes each month.
  At the same time, her vegan diet means that she does not have dietary sources of heme iron.
  The non-heme iron she consumes in plant foods is not as well absorbed as heme iron.

4.1.11. A patient has thalassemia, a genetic disorder characterized by abno...

Author: OpenStax College

A patient has thalassemia, a genetic disorder characterized by abnormal synthesis of globin proteins and excessive destruction of erythrocytes.

This patient is jaundiced and is found to have an excessive level of bilirubin in his blood. Explain the connection.

- Bilirubin is a breakdown product of the non-iron component of heme, which is cleaved from globin when erythrocytes are degraded.
  Excessive erythrocyte destruction would deposit excessive bilirubin in the blood.
  Bilirubin is a yellowish pigment, and high blood levels can manifest as yellowed skin.

4.1.12. One of the more common adverse effects of cancer chemotherapy is th...

Author: OpenStax College

One of the more common adverse effects of cancer chemotherapy is the destruction of leukocytes.

Before his next scheduled chemotherapy treatment, a patient undergoes a blood test called an absolute neutrophil count (ANC), which reveals that his neutrophil count is 1900 cells per microliter.

Would his healthcare team be likely to proceed with his chemotherapy treatment? Why?

- A neutrophil count below 1800 cells per microliter is considered abnormal.
  Thus, this patient's ANC is at the low end of the normal range and there would be no reason to delay chemotherapy.
  In clinical practice, most patients are given chemotherapy if their ANC is above 1000.

4.1.13. A patient was admitted to the burn unit the previous evening suffer...

Author: OpenStax College

A patient was admitted to the burn unit the previous evening suffering from a severe burn involving his left upper extremity and shoulder.

A blood test reveals that he is experiencing leukocytosis. Why is this an expected finding?

- Any severe stress can increase the leukocyte count, resulting in leukocytosis.
  A burn is especially likely to increase the proliferation of leukocytes in order to ward off infection,
  a significant risk when the barrier function of the skin is destroyed.

Check the answer of this question online at QuizOver.com:
Question: A patient was admitted to the burn unit OpenStax College Anatomy

4.1.14. A lab technician collects a blood sample in a glass tube. After abo...

Author: OpenStax College

A lab technician collects a blood sample in a glass tube.

After about an hour, she harvests serum to continue her blood analysis.

Explain what has happened during the hour that the sample was in the glass tube.

- When blood contacts glass, the intrinsic coagulation pathway is initiated. This leads to the common pathway, and the blood clots.
  Within about 30 minutes, the clot begins to shrink. After an hour, it is about half its original size.
  Its heavier weight will cause it to fall to the bottom of the tube during centrifugation, allowing the lab technician to harvest the serum remaining at the top.

Check the answer of this question online at QuizOver.com:
Question: A lab technician collects a blood sample OpenStax College Anatomy

4.1.15. Explain why administration of a thrombolytic agent is a first inter...

Author: OpenStax College

Explain why administration of a thrombolytic agent is a first intervention for someone who has suffered a thrombotic stroke.

- In a thrombotic stroke, a blood vessel to the brain has been blocked by a thrombus, an aggregation of platelets and erythrocytes within a blood vessel.
  A thrombolytic agent is a medication that promotes the breakup of thrombi.

Check the answer of this question online at QuizOver.com:
Question: Explain why administration of a thrombolytic OpenStax College Anatomy

4.1.16. Following a motor vehicle accident, a patient is rushed to the emer...

Author: OpenStax College

Following a motor vehicle accident, a patient is rushed to the emergency department with multiple traumatic injuries, causing severe bleeding.

The patient's condition is critical, and there is no time for determining his blood type.

What type of blood is transfused, and why?

- In emergency situations, blood type O- will be infused until cross matching can be done.
  Blood type O- is called the universal donor blood because the erythrocytes have neither A nor B antigens on their surface, and the Rh factor is negative.

Check the answer of this question online at QuizOver.com:
Question: Following a motor vehicle accident a OpenStax College Anatomy Quest

4.1.17. In preparation for a scheduled surgery, a patient visits the hospit...

Author: OpenStax College

In preparation for a scheduled surgery, a patient visits the hospital lab for a blood draw.

The technician collects a blood sample and performs a test to determine its type.

She places a sample of the patient's blood in two wells.

To the first well she adds anti-A antibody. To the second she adds anti-B antibody. Both samples visibly agglutinate.

Has the technician made an error, or is this a normal response? If normal, what blood type does this indicate?

- The lab technician has not made an error. Blood type AB has both A and B surface antigens, and neither anti-A nor anti-B antibodies circulating in the plasma.
  When anti-A antibodies (added to the first well) contact A antigens on AB erythrocytes, they will cause agglutination.
  Similarly, when anti-B antibodies contact B antigens on AB erythrocytes, they will cause agglutination.