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Section:- B

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Q.11

Ans,

Function of blood:-

Blood has three main functions: Transport, protection and regulation.

(1) Transport:-

⇒ Gases namely oxygen (O_2) and carbon dioxide (CO_2) between the lung and rest of the body.

⇒ Nutrient from the digestive tract and storage sites to the rest of body.

⇒ Waste products to be detoxified or removed by the liver and kidneys.

⇒ Heat to the skin so as to help regulate body.

temperature.

(2) Protection

===== Blood has several roles in inflammation.

* Leukocytes or white blood cells destroy invading microorganism and cancer cells

* Antibodies and other proteins destroy pathogenic substance.

* Platelet factors initiate blood clotting and help minimise blood loss.

(3) Regulation:-

===== Blood help regulate.

* pH by interacting with acids and bases

* water balance by transferring water to and from tissues.

Composition of blood:-

Blood is classified as a connective tissue and consists of two main components.

plasma, which is a clear extracellular fluid formed elements which are made up of the blood cells and platelets.

The formed elements are so named because they are enclosed in a plasma membrane and have a definite structure and shape. All formed elements are tiny fragments

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of bone marrow cells.

formed elements are:

* Erythrocytes also
known as red blood
cells (RBCs).

* Leukocytes, also
known as white blood
cells (WBCs).

* Platelets.

Q2

Ans (1)

Erythrocytes:-

There are important cells in your body that travel in blood. They are involved in a gas exchange that is essential to human life.

Red blood cells are their most common name, but they are also called erythrocytes in medical terminology. Erythro means red while -cyte means cell.

Erythrocytes are created in the bone marrow

through a process called erythropoiesis before being released into the bloodstream. At the end of their life, they go to

the spleen where they are broken down. their lifespan is about 120 days or 4 months.

(2) Erythropoiesis:-

(From Greek 'erythro' meaning "red" and 'poiesis' meaning "to make")

The process which produces red blood cells (erythrocytes) which is the development from erythropoietic stem cell to mature red blood cell.

it is stimulated by decreased O_2 in circulation which is detected by the kidneys which then secrete the hormone ~~erythropoietin~~ erythropoietin

Erythropenia:-

The presence of decreased number in the blood erythrocyte in the blood as occurs in some forms of anaemia: Also called erythrocytopenia.

Q3

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Ans

Platelets:-

Platelets also called thrombocytes. These are component of blood whose function (along with the coagulation factors) is to react to bleeding from blood vessel injury by clumping. Thereby initiating a blood clot. Platelets have no cell nucleus. They are fragment of cytoplasm that are derived from the megakaryocytes of the bone marrow, which they enter the circulation. Activated platelets have cell membrane projection covering their surface.

Platelets are found only in mammals whereas in other vertebrates, (e.g. birds, amphibians) thrombocytes circulate as intact mononuclear cells.

Functions

Formation of blood clots
Prevention of bleeding.

Mechanism of clotting

Platelets are made in your bone marrow along with your white and red blood cells. Your bone marrow is the spongy center inside your bones.

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(1) Disorders of coagulation are disease states which can result in hemorrhage, bruising or thrombosis.

(2) Coagulation is highly conserved throughout biology in all mammals. Coagulation involves both a cellular (platelet) and involves both a cellular (platelet) and a protein (coagulation factor) component.

(3) The system in human has been the most extensively researched and is best understood.

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ABO system:

⇒ The ABO blood group system is the most important blood group system in human blood transfusion.

⇒ Found on platelets epithelium and cell other than erythrocytes AB antigens can also cause an adverse immune response to organ transplantation. The associated anti-A and anti-B antibodies are usually IgM antibodies which are produced in the first years of life by sensitization to environmental substances such as food bacteria and viruses.

History:-

== == == Karl Landsteiner:-

discovered the ABO
Blood group system in
1901.

⇒ He and five co-workers
began mixing each other
red blood cell and
serum together and
accidentally performed
the forward and
reverse ABO grouping.

importance of ABO:-

== == == == ==

There are two principles

- ① Almost all normal
healthy individual above
3-6 months of
age have naturally occurring
Abs to the ABO Age
that they lack.

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(2) These naturally occurring Abs are mostly IgM class. That means that they are antibodies capable of agglutinating saline / low protein suspended red cell without enhancement and may activate complement cascade.

ABO Typing:-

* ABO typing involves both antigen typing and antibody detection. The antigen typing is referred to as the forward typing and the reverse typing.

* The forward typing determines antigens on patients or donor's cell,

a) :- cell are tested with the antisera reagents anti A, anti B, (and in the case of donor cell anti A, B)

(b) Reagents are either made from hyper immunized human sources or monoclonal antibodies.

(c) one advantage of the monoclonal antibodies are the antibody strength. The reverse typing determines antibodies in patients, or donor's cell.

a) serum tested with reagent A, cells and B cell.

(b) Reverse grouping is also known as back typing or serum confirmation.

Q5

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Ans

A person fell down from a tree and become unconscious with bleeding from head we will do first aid and immediate assistance given any person suffering from either a minor or serious illness or injury with care provided to preserve life prevent the condition from worsening

Steps of first aid

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There are three basic steps first aid.

- ① check the scene for danger:- look for anything that might be.

dangerous, like signs of fire, falling debris or violent people: if your safety is at risk remove yourself from the area and call for help.

(2) call for medical help if needed.

if you suspect the sick or injured person needed emergency medical care tell a nearby person to call or the local number for emergency medical services.

(3) provide care:

if you can do so safely remain with the sick or injured person until professional.

help arrives.

Remove yourself from danger if at any point in the situation you think your safety might be at risk.

First aid bandage

in many cases you can use an adhesive bandage to cover minor cuts, scrapes or burns. To cover and protect larger wounds, you might need to apply a clean gauze pad or roller bandage.

Bandage to wound
These steps

- ① Hold the injured area steady.
- ② Gently but firmly wrap the bandage around the injured limb or body

- ③ Fasten the bandage with sticky tape or safety pins.

CPR:-

- ① Place both hands on the center of their chest with one hand on top of the other
- ② Press straight down to compress their chest repeatedly at a rate of about 100 to 120 compression per minute.
- ③ Compressing the chest to the beat of staying Alive by the Bee Gees or crazy in love by Beyonce can help you count at correct rate.
- ④ Continue performing chest compression until professional help arrives.

Q5

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(Ans)

I met with my friend and we know ~~with~~ ~~me~~ he is a covid positive case take all measures The following precaution.

Wash your hands often.

Wash your hand often with soap and water for least 20 second especially after you have been in public place or after blowing your nose coughing or sneezing.

- * use hand sanitizer
- * Avoid touching your eyes nose and mouth without wash hand.

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Avoid close contact:

* Avoid close contact with people who are sick even inside your home.

if possible maintain 6 feet between the person who is sick and other household members.

* put distance between yourself and other people outside of your home.

cover your mouth and nose with cloth face cover when around other.

The cloth face cover is meant to protect other people in case

you are infected.

* Do Not use a facemask meant for a health care worker.
 + continue to keep about 6 feet between yourself and other.

The cloth cover is not a substitute for social distancing.

cover coughs and sneezes.

if you are around other and do not have on your cloth face covering remember to always cover your mouth and nose.

* Throw used tissues in the trash.

clean and disinfect?

clean AND disinfect frequently touched surface daily.

It includes tables, door knobs, light switches, countertops, handleg desks, phones, keyboards, toilets, faucets and sinks

* if surfaces are dirty clean them.

Monitor your Health

* Be alert for symptoms. Watch for fever, cough, shortness of breath or other symptoms of covid 19.