Organisation

What is a tissue?

Principles of organisation

Organisation

What are organs?

Principles of organisation

Organisation

Put the following in order of size (smallest first): palisade cell, mitochondria, ribosome, nucleus, vacuole,

Principles of organisation

Organisation

Name the parts of the digestive system.

The human digestive system

Organisation

What happens to enzymes at low temperature?

The human digestive system

Organisation

What happens to enzymes at high temperatures?

The human digestive system

Organisation

Explain the term optimal pH using a protease produced in the stomach as an example.

The human digestive system

Organisation

Explain enzyme action using the lock and key hypothesis.

The human digestive system

Organisation

Where is amylase produced?

The human digestive system

Organisation

Where is protease produced?

The human digestive system

Organs are aggregations of tissues which perform a similar function

A group of cells with a similar structure and function

Mouth, oesophagus, stomach, small intestine, large intestine, rectum, anus.

ribosome, mitochondria, nucleus, vacuole, palisade cell.

The enzyme loses its shape and the active site no longer binds to the substrate.

They have low kinetic energy and will rarely collide with substrate molecules which results in a low rate of reaction.

Enzymes action depends on the shape of the active site (the lock) fitting to substrate (the key). When the enzyme and substrate are joined together the enzyme can break-

Optimal pH is the pH at which the rate of reaction is the fastest. In the stomach the protease enzymes work best at pH3.

Stomach, pancreas and small intestine.

Salivary glands, pancreas and small intestine.

Organisation

Where is lipase produced?

The human digestive system

Organisation

What are the products of amylase digestion?

The human digestive system

Organisation

What are the products of protease digestion?

The human digestive system

Organisation

What are the products of lipase digestion?

The human digestive system

Organisation

Where is bile made?

The human digestive system

Organisation

Where is bile stored?

The human digestive system

Organisation

Name two functions of bile.

The human digestive system

Organisation

What is the food test for glucose?

The human digestive system

Organisation

What is the positive result for the test for glucose?

The human digestive system

Organisation

What is the food test for starch?

The human digestive system

Starch is broken down into glucose.

Pancreas and small intestine.

Lipids are broken down in fatty acids and glycerol

Protein is broken down into amino acids.

Gall bladder

Liver

Benedict's test

It is alkaline to neutralise hydrochloride acid from the stomach. Bile emulsified fat to form small droplets which increases the surface area of lipid for quicker digestion.

Iodine test

Green, orange or red.

Organisation

What is the positive result for the test for starch?

The human digestive system

Organisation

What is the food test for protein?

The human digestive system

Organisation

What is the positive result for the test for protein?

The human digestive system

Organisation

What is the food test for lipids?

The human digestive system

Organisation

What is the positive result for the test for lipids?

The human digestive system

Organisation

Name the two blood vessels which carry blood into the heart.

The heart and blood vessels

Organisation

Name the two blood vessels which carry blood away from the heart.

The heart and blood vessels

Organisation

Which blood vessels entering or leaving the heart contain oxygenated blood.

The heart and blood vessels

Organisation

Which blood vessels entering or leaving the heart contain deoxygenated blood.

The heart and blood vessels

Organisation

Which chamber of the heart pumps blood to the lungs?

The heart and blood vessels

Biuret test

Blue/black

Sudan III

Lilac

Vena cava and pulmonary vein

A red layer

Pulmonary vein and aorta.

Pulmonary artery and aorta

Right ventricle

Pulmonary artery and vena cava.

Organisation

Which chamber of the heart pumps blood to the body?

The heart and blood vessels

Organisation

Explain the term "double circulatory" system.

The heart and blood vessels

Organisation

How is the natural resting heart rate controlled.

The heart and blood vessels

Organisation

What is the function of an artificial pacemaker.

The heart and blood vessels

Organisation

Name the three types of blood vessels found in the body.

Blood

Organisation

Describe the structure of arteries.

Blood

Organisation

Describe the structure of capillaries.

Blood

Organisation

Describe the structure of veins

Blood

Organisation

What is blood made of? Red blood cells, white blood cells, platelets and plasma.

Blood

Organisation

What part of the blood carries oxygen? Red blood cells

Blood

The circulatory system consists of a deoxygenated loop which passes the the lungs and an oxygenated loop which passes through the body. Blood passes through

Left ventricle

An artificial pacemaker is an electrical device used to correct irregularities in the heart.

It is controlled by a group of cells in the right atrium which act as a pacemaker.

Arteries have thick walls with large muscle layers.

Artery, vein and capillary.

Veins have thinner walls but contain valves to ensure blood flows in one direction.

Capillaries are much small than arteries and veins and are only a one cell thick. They have gaps in their walls to allow plasma to leak out.

Red blood cells

Red blood cells, white blood cells, platelets and plasma.

Organisation

What part of the blood is involved with clotting?

Blood

Organisation

What part of the blood carries dissolved glucose?

Blood

Organisation

What part of the blood is involved with the immune response.

Blood

Organisation

What part of blood has granulated cytoplasm with an irregular shaped nucleus?

Blood

Organisation

What part of blood is made from cell fragments?

Blood

Organisation

What part of blood is a yellow liquid?

Blood

Organisation

What part of blood has no nucleus?

Blood

Organisation

What type of disease is coronary heart disease?

Coronary heart disease

Organisation

Describe how coronary heart disease develops.

Coronary heart disease

Organisation

Describe how a mechanical device can treat coronary heart disease.

Coronary heart disease

Plasma

Platelets

White blood cells

White blood cells

Plasma

Platelets

A non-communicable disease

Red blood cells

Stents are inserted through veins into the coronary arteries. A ballon is then inflated to open the stent which keeps the coronary artery open.

Layers of fatty material build up inside coronary arteries, narrowing them. This reduces the flow of blood through the coronary arteries, resulting in a lack of oxygen

Organisation

Describe how drugs can treat coronary heart disease.

Coronary heart disease

Organisation

Describe how a heart may be replaced.

Coronary heart disease

Organisation

Describe the benefits and risks associated with mechanical device treatments.

Coronary heart disease

Organisation

Describe the benefits and risks associated with drug treatments.

Coronary heart disease

Organisation

Describe two problems which can occur with heart valves.

Coronary heart disease

Organisation

Describe the consequences of a faulty valve.

Coronary heart disease

Organisation

Describe the treatment for faulty valves.

Coronary heart disease

Organisation

What is health?

Health issues

Organisation

Name four factors which cause ill health.

Health issues

Organisation

Name two types of diseases.

Health issues

If heart failure occurs a heart can be transplanted. Sometimes an artificial heart can be used to keep patients alive while waiting for a transplant or to allow a heart

Statins are drugs which reduce blood cholesterol levels and slow down the rate of fatty material deposit.

Statins reduce the risk of strokes, heart disease and heart attacks. Can cause negative side effects such as headaches, kidney failure and liver damage. It can take

Stents lower the risk of coronary heart disease, are a long term solution and recovery from surgery is quick. The is a risk of infection from the surgery and for patients

Blood does not circulate as effectively. Lack of oxygen in circulation around the body.

Heart valves may not fully open or they may leak.

Health is the state of physical and mental well being.

Replacement with biological valves (from humans or other animals or synthetic valves (made from metal and plastic).

Communicable and non-communicable

Diseases, diet, stress and life situations.

Organisation

What can defects in the immune system lead to?

Health issues

Organisation

What may viral infections trigger?

Health issues

Organisation

What can immune reactions caused by pathogens trigger?

Health issues

Organisation

What can severe physical ill health lead to?

Health issues

Organisation

Discuss the human and financial cost of non-communicable disease to an individual, a local community and nationally.

The effect of lifestyle

Organisation

List three lifestyle factors which affect the incidence of non-communicable disease.

The effect of lifestyle

Organisation

Name three risk factors for cardiovascular disease.

The effect of lifestyle

Organisation

Name a risk factor for type 2 diabetes.

The effect of lifestyle

Organisation

Name a risk factor for liver disease.

The effect of lifestyle

Organisation

Name a risk factor for lung disease and cancer.

The effect of lifestyle

Cancer

Infectious disease

Depression and other mental illness

Allergies such as skin rashes or cancer

Diet, alcohol and smoking.

Many millions of human die each year from non-communicable disease. Their short life span and lower quality of life will also have an impact on their families. Treating illness

Obesity.

Diet, smoking and lack of exercise.

Smoking.

Alcohol.

Organisation

Name two risks factors which can affect the health of unborn children.

The effect of lifestyle

Organisation

Name two risk factors in cancer.

The effect of lifestyle

Organisation

What is cancer?

Cancer

Organisation

Describe benign tumours.

Cancer

Organisation

Describe malignant tumours.

Cancer

Organisation

Name six plant tissues.

Plant tissues

Organisation

Name a plant organ involved with photosynthesis.

Plant tissues

Organisation

Starting from the top, name the layers of the leaf in order.

Plant tissues

Organisation

Describe the process of transpiration.

Plant organ system

Organisation

Explain the effects of changing temperature on the rate of transpiration in plants.

Plant organ system

Carcinogens (in chemicals) and ionising radiation.

Smoking and alcohol.

Growths of abnormal cells that are contained in one area usually within a membrane. They do not move to other parts of the body.

Cancer is a result of changes (mutations) in cells which lead to uncontrolled growth and division.

Epidermal, palisade mesophyll, spongy mesophyll, xylem, phloem and meristem.

Malignant tumour cells are cancerous. They invade neighbouring tissue and spread to different parts of the body through the blood where they grow to form secondary

Waxy cuticle (not a tissue), upper epidermis, palisade mesophyll, spongy mesophyll, lower epidermis (containing guard cells).

Leaf

Increasing the temperature will increase the rate of transpiration in a plant (more water evaporates from the stomata).

Root hairs cells take up water from the soil by osmosis. Xylem vessels transport the water up the plant to the leaves. Water evaporates from the stomata of leaves. It

Organisation

Explain the effects of changing humidity on the rate of transpiration in plants.

Plant organ system

Organisation

Explain the effects of changing air movement on the rate of transpiration in plants.

Plant organ system

Organisation

Explain the effects of changing light intensity on the rate of transpiration in plants.

Plant organ system

Organisation

Where are stomata located in leaves?

Plant organ system

Organisation

Which plant organs are involved in the transport of substances.

Plant organ system

Organisation

What is translocation?

Plant organ system

Organisation

Describe the role of stomata in transpiration.

Plant organ system

Organisation

How are root hair cells adapted for their function?

Plant organ system

Organisation

What is phloem?

Plant organ system

Organisation

What is xylem?

Plant organ system

Increasing air movement (wind) will increase the rate of transpiration in a plant (more water evaporates from the stomata).

Increasing humidity will decrease the rate of transpiration (less water evaporates from the stomata).

Stomata are located in the lower epidermis of the leaf in most terrestrial plants. Water lily leaves float on water, so their stomata are on the upper epidermis of the leaf.

The stomata open during the day (transpiration) but close at night (no transpiration)

This is the process where phloem tissue transports dissolved sugars from the leaves to the rest of the plant for immediate use or storage.

Xylem (water and mineral ions) and phloem (sugar)

Root hair cells have a long thread like structure which increases the surface area to volume ratio of the cell. This allows for the efficient uptake of water and mineral

The role of stomata and guard cells is to control gas exchange and water loss (transpiration)

Hollow tubes strengthened by lignin adapted for the transport of water in the transpiration stream

Phloem is composed of tubes of elongated cells with sieve plates. Cell sap can move from one phloem cell to another through the sieve plates in the end cell walls.