BIOLOGY 1 2005 - NECTA FORM FOUR

Solutions from: Maktaba by TETEA

By Yohana Lazaro

1.

i	ii	iii	iv	v	vi	vii	viii	ix	x
C	B	E	D	E	B	B	C	A	B

2.

i	ii	iii	iv	v	vi	vii	viii	ix	x
T	R	P	N	K	I	H	F	D	B

3.(a)(i)A pelvic bone, B ligament, C cartilage, D synovial fluid, E synovial membrane, F femur

(ii)B- join two bones

C-cushioning bones against impact.

D-lubricate the joint.

(iii) ball and socket joint.

(b)(i)fertilization

(ii)female sex (XX)

(iii) oestrogen hormones

(iv)voice become very soft.

4(a)(i) amylase enzyme

(ii) enzymes are specific.

(iii)chemical inhibitor.

(b)Starch is a carbohydrate, and the main purpose of carbohydrates is to provide energy for the body.

5(a)Shock is a life-threatening condition that occurs when the body is not getting enough blood flow. Lack of blood flow means the cells and organs do not get enough oxygen and nutrients to function properly.

(b)causes of shock.

- Cardiogenic shock (due to heart problems)

-Hypovolemic shock (caused by too little blood volume)

-Anaphylactic shock (caused by allergic reaction)

-Septic shock (due to infections)

-Neurogenic shock (caused by damage to the nervous system)

(c)Fainting happens when you lose consciousness for a short amount of time because your brain isn't getting enough oxygen.

-Fainting can be triggered by a number of factors, including:

-fear or other emotional trauma

-severe pain

-a sudden drop in blood pressure

-low blood sugar due to diabetes

-dehydration

-standing in one position for too long

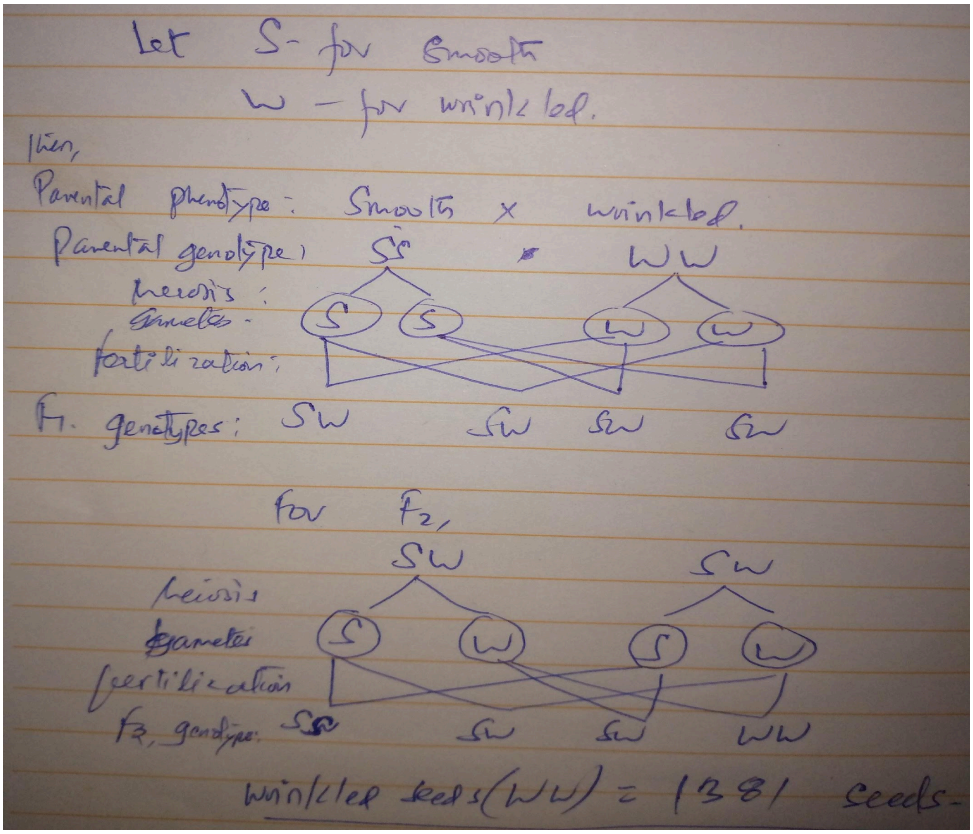
-standing up too quickly

-physical exertion in hot temperatures.

6(a)variation is the The presence of differences between living things of the same species .

(b)Continuous variation is where the different types of variations are distributed on a continuum. eg height. On the other hand, discontinuous variation is where the different types of variations are placed into discrete categories.eg blood group.

(c)



7(a)(i) A root hair, B epidermis, C cortex, D endodermis

E xylem, F phloem

-from the root.

(b)Roots perform the following functions:

-Roots absorb water and nutrients from the soil.

-They anchor the plant firmly.

-They help in storing food and nutrients.

-Roots transport water and minerals to the plant.

8(a)because the movement of food through oesophagus does not affected by force of gravity.

(b)because excess water is given out through sweating.

(c)it is due to precence of cell wall.

9.(a)mulch is any material that covers the soil's surface.

BENEFITS OF MULCHING

Reduces weed growth by keeping light from reaching the soil surface.

Reduces water loss from the soil surface, which helps maintain soil moisture.

Moderates soil temperatures, keeping it warmer on cold nights and cooler on hot days.

Protects bare soil, reducing erosion and soil compaction.

Protects plants from the harsh conditions of winter freezes, thaws, and winds.

There are many other benefits of mulch.

Characteristics of viruses.

- Viruses are infectious agents with both living and nonliving characteristics.

-Living characteristics of viruses include the ability to reproduce – but only in living host cells – and the ability to mutate.

-Nonliving characteristics include the fact that they are not cells, have no cytoplasm or cellular organelles, and carry out no metabolism on their own and therefore must replicate using the host cell's metabolic machinery.

-Viruses can infect animals, plants, and even other microorganisms.

-Since viruses lack metabolic machinery of their own and are totally dependent on their host cell for replication, they cannot be grown in synthetic culture media.

Viruses are only "active" within host cells which they need to reproduce, while bacteria are single-celled organisms that produce their own energy and can reproduce on their own. Bacteria serve many vital roles in nature outside of being infectious.

10(a)(i)gaseous exchange is the exchange of gas between the alveoli within the body, while breathing is the process of taking in air and out.

(ii)Gas exchange is the exchange of oxygen and carbon dioxide across a membranous surface through diffusion, allowing oxygen to be extracted from the environment and transferred into the organism’s cells while carbon dioxide is simultaneously released from the cells. Efficient gas exchange is essential for the survival of animals (fish, insects, mammals) because it provides oxygen (required for cellular respiration) to the cells of the animal which is essential as respiration provides energy for the cells to live allowing the animal to survive, and because it releases carbon dioxide (waste product of respiration) from the body.

(iii)Large surface area - many alveoli are present in the lungs with a shape that further increases surface area.

Thin walls - alveolar walls are one cell thick providing gases with a short diffusion distance.

Moist walls - gases dissolve in the moisture helping them to pass across the gas exchange surface.

Permeable walls - allow gases to pass through.

Extensive blood supply - ensuring oxygen rich blood is taken away from the lungs and carbon dioxide rich blood is taken to the lungs.

(b)(i) lungs, human

(ii)gills,fish

(iii) buccal cavity,frog

(v)insects.

(c) Importances of fermentation.

a. In Alcoholic beverage(brewing)

b. In Yogurt production (Dairy)

b. In Bread Making (baking)