BIOLOGY 1 2018 - NECTA FORM FOUR

Solutions from: Maktaba by TETEA

By Yohana Lazaro

1.

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

2.

i	ii	iii	iv	v	vi	vii	viii	ix	x
M	C	D	N	G	A	L	F	J	E

3(a) Biological apparatus are tools and equipment found in Laboratory, used for Biological experiments, WHILE Biology laboratory is the special room where biological experiments are done.

(b)(i)is a chemical substance which an poison you and can cause death.

(ii)is the substance which can catch fire easily .

(iii)is a chemical substance which can burn the skin.

(iv)is a chemical substance which emits dangerous radiations that can endanger the life.

4(a)(i)Blood transfusion is the process of infusion of blood to a person who lack it.

(ii)Blood compatibility is the ability of the blood from differerent person to mix with that of the other without clamping of red blood cells.

(b)Advantages of blood transfusion:-

(i)it serves life to a person who got accident and lose some blood.

(ii)it serves life to the people with genetic disorders like anaemia.

(c) precautions during blood transfusion.

-to check the blood group.

-bloodbmust be screened.

-blood from veins.

5.(a) characteristics of phylum Filicinophyta.

-leaves are divided into leaflets.

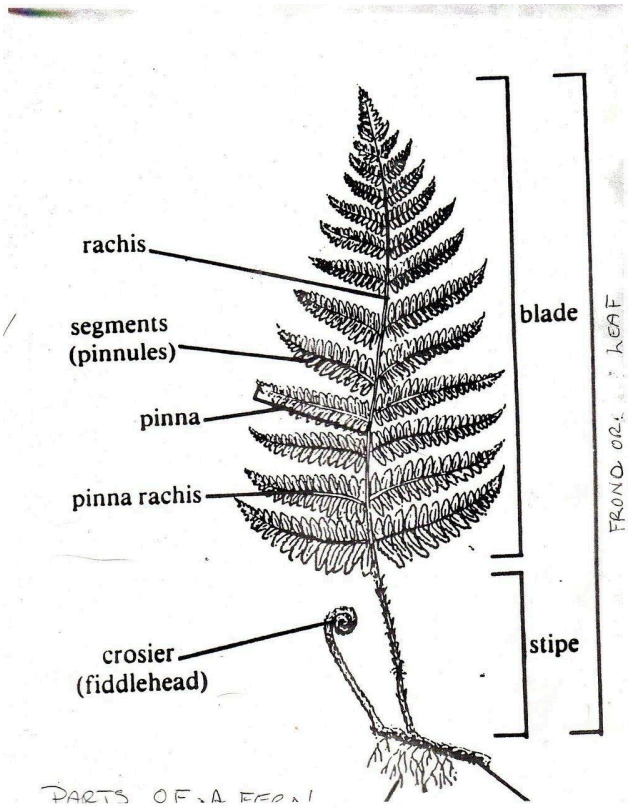
-they use spores for reproduction.

-they have true vascular bundles.

-they are very short.

-spores are produced underside of the leaf.

(b)



6 (a)stages of human post-natal growth.

-The neonatal period extends from birth to one month. Infancy begins at one month and continues to two years of age.

- Childhood begins at two years of age and lasts until adolescence.

-Adolescence begins at around 12 or 13 years of age and ends with the beginning of adulthood.

-Adulthood, or maturity, includes the years between ages 18 to 25 and old age.

-Old age.

(b) Primary growth is the type of growth that leads to increase of roots and shoot apices.

7(a)Each month during the years between puberty and menopause, a woman's body goes through a number of changes to get it ready for a possible pregnancy. This series of hormone-driven events is called the menstrual cycle.

During each menstrual cycle, an egg develops and is released from the ovaries. The lining of the uterus builds up. If a pregnancy doesn't happen, the uterine lining sheds during a menstrual period. Then the cycle starts again.

(b)human reproductive disorders include

-prostate cancer

-importence

-cervical cancer.

8(a)macroelements in plants

-magnesium

-potasium

-nitrogen

-oxygen

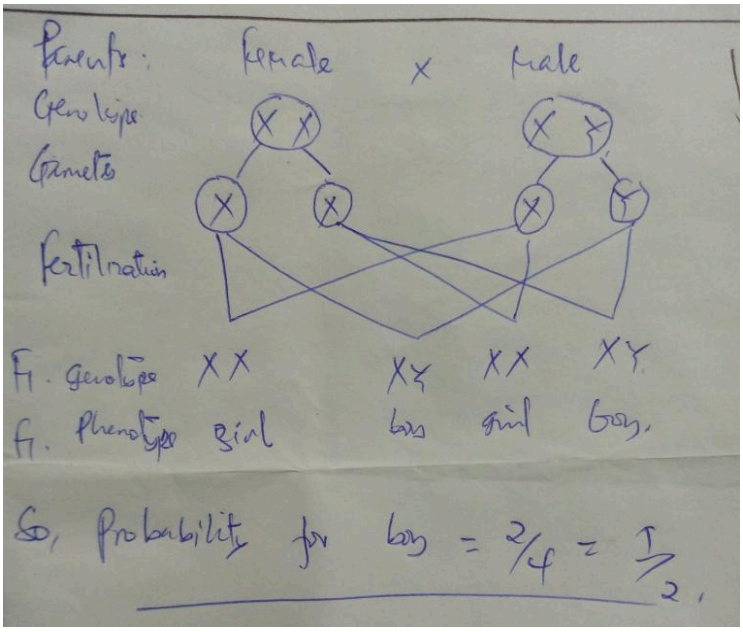
-sulphur.

(b) digestive system disorders.

-Stomach ulcers,caused by acid accumulation in the stomach leading to corrosion.

-dental carriers,caused by bacteria to damage teeth.

9(a)



(b)(i)Sex linked genes are genes that are in the sex chromosomes and that are therefore inherited differently between males and females.

(ii)sex determination are contributing factors that determine sex of a baby.

(iii)phenotype is the physical appearance of an organism,like tall,short,etc.

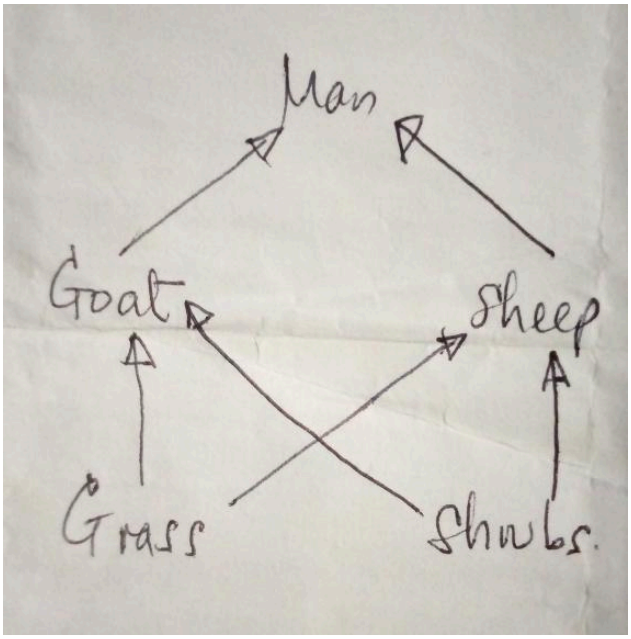
10.(a)(i)Biotic components are the living components of the ecosystem.

(ii) Abiotic components are the non living components of the ecosystem.

(iii)Food chain is the linear representation of flow of energy.

(iv)food web (or food cycle) is the natural interconnection of food chains and a graphical representation (usually an image) of what-eats-what in an ecological community.

(b)



11. DRUG ABUSE.

Drug abuse is the use of illegal drugs or the use of prescription or over-the-counter medications in ways other than recommended or intended. It also includes intentional inhalation of household or industrial chemicals for their mind-altering effects.

- Causes of drug abuse

-Depression and Mental Illnesses

-Stress and Inability to Cope

-Low Self-Esteem

-Social Pressures

-Lack of Parent-Child Communicat

-prevention of drug abuse

strategies to prevent teen drug abuse:

Know your teen's activities. Pay attention to your teen's whereabouts. Find out what adult-supervised activities your teen is interested in and encourage him or her to get involved.

Establish rules and consequences. Explain your family rules, such as leaving a party where drug use occurs and not riding in a car with a driver who's been using drugs. If your teen breaks the rules, consistently enforce consequences.

Know your teen's friends. If your teen's friends use drugs, your teen might feel pressure to experiment, too.

Keep track of prescription drugs. Take an inventory of all prescription and over-the-counter medications in your home.

Provide support. Offer praise and encouragement when your teen succeeds. A strong bond between you and your teen might help prevent your teen from using drugs.

Set a good example. If you drink, do so in moderation. Use prescription drugs as directed. Don't use illicit drugs.

12.URINE FORMATION

Urine is a waste byproduct formed from excess water and metabolic waste molecules during the process of renal system filtration. The primary function of the renal system is to regulate blood volume and plasma osmolarity, and waste removal via urine is essentially a convenient way that the body performs many functions using one process.

Urine formation occurs during three processes:

Filtration

Reabsorption

Secretion

Filtration

During filtration, blood enters the afferent arteriole and flows into the glomerulus where filterable blood components, such as water and nitrogenous waste, will move towards the inside of the glomerulus, and nonfilterable components, such as cells and serum albumins, will exit via the efferent arteriole. These filterable components accumulate in the glomerulus to form the glomerular filtrate.

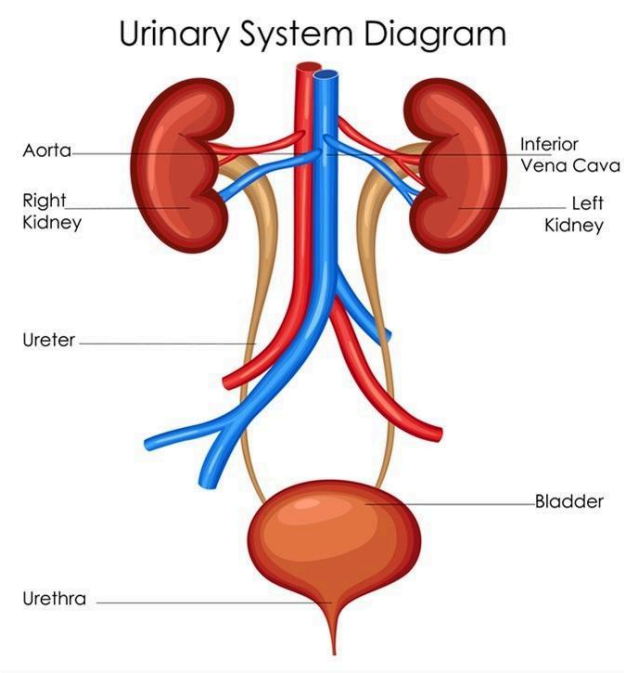
-Reabsorption The next step is reabsorption, during which molecules and ions will be reabsorbed into the circulatory system. The fluid passes through the components of the nephron (the proximal/distal convoluted tubules, loop of Henle, the collecting duct) as water and ions are removed as

the fluid osmolarity (ion concentration) changes. In the collecting duct, secretion will occur before the fluid leaves the ureter in the form of urine.

-Secretion

During secretion some substances±such as hydrogen ions, creatinine, and drugs—will be removed from the blood through the peritubular capillary network into the collecting duct. The end product of all these processes is urine, which is essentially a collection of substances that has not been reabsorbed during glomerular filtration or tubular reabsorbtion.

Urine is mainly composed of water that has not been reabsorbed, which is the way in which the body lowers blood volume, by increasing the amount of water that becomes urine instead of becoming reabsorbed. The other main component of urine is urea, a highly soluble molecule composed of ammonia and carbon dioxide, and provides a way for nitrogen (found in ammonia) to be removed from the body. Urine also contains many salts and other waste components. Red blood cells and sugar are not normally found in urine but may indicate glomerulus injury and diabetes mellitus respectively.



13.EVIDANCES OF ORGANIC EVOLUTION.

-Homologous Organs:

The organs which developed or originated from a common structure but may function differently or attain different shapes for different functions in different groups are called homologous organs.

Example: Fore limbs of different vertebrates

-Analogous Organs:

The organs which perform same function in different groups of animals but do not show a common underlying plan of structure are called analogous organs.

Example:

(i) The wings of bats and wings of insects,

(ii) Eyes of octopus and that of mammals.

Explanation:

(i) The function of wings are same – it helps in flying in both bats and insects. But they do not possess common internal plan and these organs were not evolutionarily developed from the same organ.

(ii) Eyes help in vision in both the organisms i.e., in octopus and mammals, but they had different evolutionary origins since these two structures arose embryonically from two different tissues.

-Vestigial Organs:

Organs or structures of organism which appear to be small and functionless at present, but can be shown to be homologous with ancestral organs and structures that were larger and functional at one time are called vestigial organs.

Example:

(i) The rudimentary bones of former hind limbs in the whale and snakes (Fig. 4.8).

(ii) Muscles of external ears, reduced tail bones, the appendix of the cecum, rudimentary body hair, etc. are the vestigial organs of man.

Explanation:

All the present day vestigial characters were very much functional in the respective organism's ancestors. But the organs became rudimentary in their predecessors.

-Fossil records.

Palaeontology, the science of fossils, provides the strongest and direct evidence in support of the theory of organic evolution. Fossils are dead remains of plants and animals preserved in the rocks of the remote past.