BIOLOGY 1 2003 - NECTA FORM FOUR

Solutions from: Maktaba by TETEA

By Yohana Lazaro

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

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

3(a)(i) microscopic leaves

(ii) mosquito lavae

(iii) crocodiles.

(b)large fishes due to their small number.

(c)food web.

Crocodiles

Large fishes.

small fishes.

Mosquito lavae. microscopic leaves

4(a)(i)gaseous exchange is the process of exchanging oxygen and carbondioxide in the lungs.

(ii)nassal passage. Phyrnx. trachea. bronchi. bronchioles. Alveole

(b)(i)lungs

(ii)gills

(iii)tracheal system

(iv) capillaries.

(v)lung book

(c)ligament connect bone to bone,tendons attaches the muscles to bones.

5(a)(i)A epidermal cells, B stomata, C chloroplast, D guard cell.

(ii)control the opening and closing of stomata.

(b)respiration is the breakdown of glucose to release energy, whereas burning is a chemical reaction between a fuel and an oxidant.

6.(a)(i)10

(ii) 5

(b)(i)5

(ii)4

(iii)2

7(a)(i)A placenta, B umbilical cord, C amniotic fluid, D foetus, E uterin wall.

(ii)B exchange of material between mother and foetus

C protect the foetus from mechanical shocks.

(b)(i) oxygen and nutrients

(ii)zygote is much larger than the normal cell.

8(a)(i) properties of viruses

-They reproduce at a fantastic rate, but only in living host cells.

-They can mutate.

-They are acellular, that is, they contain no cytoplasm or cellular organelles.

-They carry out no metabolism on their own and must replicate using the host cell's metabolic machinery.

(ii)While both can cause disease, viruses are not living organisms, whereas bacteria are. 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.

(b)(i) human brain

(ii),A mid brain, B cerebellum, C medulla oblongata, D spinal cord, E pituitary gland.

(c)1receptor organ stimulated, 2 impulses travel in sensory fibre, 3 impulse cross synapse, 4 impulse travel motor fibre, 5 effector organ stimulated.

9(a)responsible behavior is choosing act in a manner that positively impacts the community, society and world at large.Risky behavior any consciously, or non-consciously controlled behavior with a perceived uncertainty about its outcome, and/or about its possible benefits, or costs for the physical, economic or psycho-social well-being of oneself or others.

(b)(i) unprotected sexual intercourse.

(ii)sharing sharp tools

(iii)bad peer pressure.

(iv)forced marriage.

(c)-involving them in physical exercise.

-helping them to wash their clothes

-giving them hope

10.(a)(i) osmosis is the process whereby material move from region of low concentration to that of high concentration through semi-permeable membrane.

(ii)yes because it is not semi-permeable membrane.

(iii) osmosis requires semi-permeable membrane while diffusion does not require it.

(b)(i) phototropism is the response movement of plant towards light, while geotropism is the movement of roots in response to gravity.

(ii) Auxins hormones

(iii)chorela, diarrhea bihalsia.

11.POPULATION

population is a distinct group of individuals, whether that group comprises a nation or a group of people with a common characteristi.

CAUSES OF POPULATION DISTRIBUTION.

1. Relief and landforms

Lowland plains, flat river valleys and deltas and volcanic areas with fertile soil tend to have high population densities. Mountainous areas with steep slopes and poor quality soil tend to have low population densities.

2. Weather and climate

Temperate areas which experience few extremes of weather and climate tend to be more attracted than areas which experience extremes. Areas which are very dry, very cold or very wet tend to have sparse populations whereas areas which have a moderate climate with evenly distributed rainfall or with monsoon type climates have denser populations.

3. Soil type and quality

Areas which have rich, fertile soils allowing successful agriculture tend to have higher population densities than areas which have poor quality soils have sparse populations. Good quality soils may be found in low lying areas such as river flood plains and deltas where silt is deposited; in volcanic areas; in areas which have a high natural humus content. Poor quality soils may be found in areas with steep slopes; areas with very high rainfall throughout the year which tends to leach nutrients fro the soil; cold areas of permafrost; areas experiencing soil degradation through human management e.g. over-grazing/deforestation.

4. Water supply

Water supply is essential for human survival and development and because of this areas which have sufficient water (but not too much) tend to have denser populations than areas which are dry or suffer from regular drought or areas which have excessive rainfall or which may be prone to flooding.

5. Vegetation

Some types of vegetation make the development of settlement more likely, e.g. grasslands. Areas with particularly dense rainforest, coniferous forests or those with little vegetation tend to have sparse populations.

6. Raw materials/natural resources

Areas with a wealth of natural resources such as oil, coal or minerals may have higher population densities than areas which do not. It is important to remember though that natural resources may be found in otherwise harsh environments and that they may be traded and exported/used in areas other than where they are extracted.

7. Natural threats

These may affect population density as people may try to avoid areas where pests, threatening animals and diseases are particular risks.

Factors lead to population change.

1) Agriculture

Areas with well developed farming of crops or animals are often densely populated.

2) Secondary industry

Those areas in which manufacturing has developed tend to be densely populated. It is worth noting that even in old industrial areas in which manufacturing has declined or even closed, population densities may remain high.

3) Accessibility

Areas with well developed transport infrastructure and links through road, rail, shipping, canals and air are likely to be more densely populated than areas which are poorly connected

4) Political decisions

Government policy can have a significant impact upon population densities. This can occur if governments decide to open up previously underdeveloped areas.

12.IMPORTANCES OF BACTERIA.

- Decay and decomposition:

Soil bacteria play an important role in brining about decomposition of organic matter. They serve a double purpose. In the first instance they act as scavengers removing harmful waste from the earth.Secondly, they return it to the soil as plant food. The dead bodies and wastes of organisms (both plants and animals) are decomposed by the activities of the saprophytic bacteria.

-Soil fertility:

Some bacteria play an important role in maintaining and others in increasing soil fertility. The fertility of soil is proportional to its nitrogen content. Nitrogen is an essential ingredient of all living protoplasm. All growing plants, therefore, require it in their metabolism.

- Ammonifying Bacteria:

The saprophytic bacteria break down the proteins and other nitrogen containing remains of the plant and animal origin in the soil to amino acids by secreting enzymes.The amino acids are then converted into ammonia by a group of bacteria called the ammonifying bacteria. The liberated ammonia may combine with carbon dioxide and water in the soil to form ammonium carbonate.

-The souring and curding of milk by lactic acid bacteria is another common example of application in everyday life.

-The production of linen is impossible without bacterial activity. The tough fibres, which are left behind, are separated. These fibres are spun and woven into linen cloth, ropes, etc.

13.SKIN

The skin is composed of several layers. The very top layer is the epidermis and is the layer of skin you can see.

Made of dead skin cells, the epidermis is waterproof and serves as a protective wrap for the underlying skin layers and the rest of the body.

It contains melanin, which protects against the sun's harmful rays and also gives skin its color. When you are in the sun, the melanin builds up to increase its protective properties, which also causes the skin to darken.

The epidermis also contains very sensitive cells called touch receptors that give the brain a variety of information about the environment the body is in.

The second layer of skin is the dermis.

The dermis contains hair follicles, sweat glands, sebaceous (oil) glands, blood vessels, nerve endings, and a variety of touch receptors.

Its primary function is to sustain and support the epidermis by diffusing nutrients to it and replacing the skin cells that are shed off the upper layer of the epidermis.

New cells are formed at the junction between the dermis and epidermis, and they slowly push their way towards the surface of the skin so that they can replace the dead skin cells that are shed. Oil and sweat glands eliminate waste produced at the dermis level of the skin by opening their pores at the surface of the epidermis and releasing the waste.

The bottom layer is the subcutaneous tissue which is composed of fat and connective tissue. The layer of fat acts as an insulator and helps regulate body temperature. It also acts as a cushion to protect underlying tissue from damage when you bump into things. The connective tissue keeps the skin attached to the muscles and tendons underneath.

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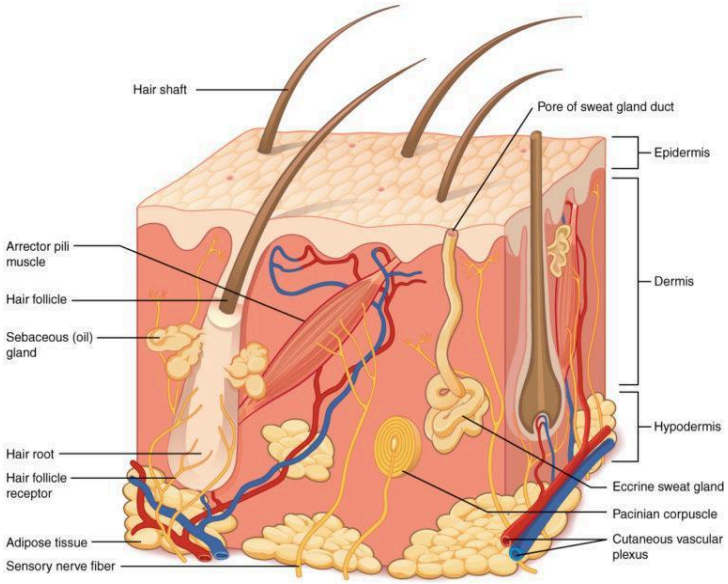

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