BIOLOGY 1 2007 - NECTA FORM FOUR

Solutions from: Maktaba by TETEA

By Yohana Lazaro

1.

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

2

i	ii	iii	iv	v	vi	vii	viii	ix	x
J	K	S	A	E	G	P	M	C	Q

3(a)(i)A cell membrane, B cytoplasm,

(ii) chroloplast.

(b)(i)red blood cell carryies oxygen to the body.

-has no nucleus to increase surface area for oxygen.

(ii)root hair cell absorbs water and minerals from the soil.

-has mitochondria to provide energy for the process.

4(a)(i)mouth

(ii)small intestine or illeum.

(b)(i)pH is 4.7

(ii)due to base in the mouthi creases.

(iii)sweets has small effect in pH change.

5.(a)(i)release teas,(ii)sebum from sebasaceous glands, (iii) cillia catched. (iv)gastric juice/HCL

(b)(i)plants use oxygen for photosynthesis at Durk stage,hence bring much competition for oxygen.

(ii)charcoal releases carbon monoxide that prevent the red blood cell to carry oxygen.

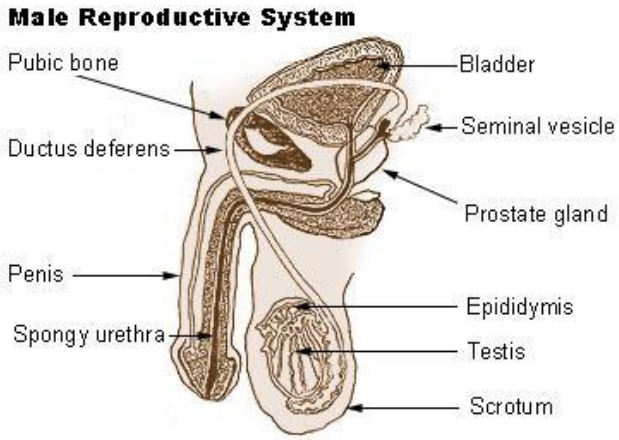
6.(a)(i) Sexual reproduction occurs when the sperm from the male parent fertilizes an egg from the female parent, producing an offspring that is genetically different from both parents.

(ii)X is testical.

-produce sperms

-store sperms

(b)(i)



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(ii)-beads

-cheat widden

7.factors affecting germination of seeds

-temperature

-sunlight

-moisture

8(a)(i) Immunity is the ability of the body to resist diseases.

(ii)Naturally acquired immunity occurs when a person is exposed to a live pathogen, develops the disease, and then develops immunity.Artificially-acquired immunity is an immediate, but short-term immunization provided by the injection of antibodies.

(b)-chickenpox

-measles

-polio and pneumococcal.

9.(a) temperature and water.

(b) phosphorus is the limiting factor for plants in water because of its shortness availability in the water land than nitrate which occurs in excess.

10(a)it tends to follow the direction of light due phototropism.

(b)this is due to force of gravity geotropism.

11.

Disease.	Causes	TRANSMITION	Prevention
-miningites	Meningococcal bacteria	Sharing Respiratory secretions like saliva	Practice good hygiene
-cholera	Vibrio cholerae	Contaminated water	Boiling drinking water
-malaria	Plasmodium	Anopheles mosquito	Sleeping in mosquito net
-bilhaziasis	Schistosoma	Water with flukes	Wearing shoes always

12.

Natural resources are resources that exist without any actions of humankind. This includes the sources of valued characteristics such as commercial and industrial use, aesthetic value, scientific interest and cultural value. On Earth, it includes sunlight, atmosphere, water, land, all minerals along with all vegetation, and animal life.

Types.

Renewable resources — Renewable resources can be replenished naturally. Some of these resources, like sunlight, air, wind, water, etc. are continuously available and their quantities are not noticeably affected by human consumption. Though many renewable resources do not have such a rapid recovery rate, these resources are susceptible to depletion by over-use. Resources from a human use perspective are classified as renewable so long as the rate of replenishment/recovery exceeds that of the rate of consumption. They replenish easily compared to non-renewable resources.

Non-renewable resources – Non-renewable resources either form slowly or do not naturally form in the environment. Minerals are the most common resource included in this category. From the human

perspective, resources are non-renewable when their rate of consumption exceeds the rate of replenishment/recovery; a good example of this are fossil fuels, which are in this category because their rate of formation is extremely slow (potentially millions of years), meaning they are considered non-renewable. Some resources naturally deplete in amount without human interference, the most notable of these being radio-active elements such as uranium, which naturally decay into heavy metals.

Humans impact the physical environment in many ways: overpopulation, pollution, burning fossil fuels, and deforestation. Changes like these have triggered climate change, soil erosion, poor air quality, and undrinkable water. These negative impacts can affect human behavior and can prompt mass migrations or battles over clean water.

Use less water. Taking shorter showers or turning off the faucet while brushing your teeth can reduce water waste in your home. Only use your dishwasher or washing machine when there is a full load, and switch to energy-saving appliances if possible.

Turn off the lights. Turn off any lights or televisions after you leave a room. Unplug appliances like portable air conditioners, toasters, and coffeemakers when not in use, as they can continue to use small amounts of electricity. Additionally, LED light bulbs require far less wattage than standard bulbs, so switching to this alternative lighting method can also help conserve resources.

Use renewable energy. Although renewable energy consumption has been in practice for centuries, recent years of climate change and global warming have pushed many scientists and researchers to look for ways to incorporate more green practices into our everyday lives. Renewable energy replenishes itself, cutting down on our need to harvest new resources. Using solar panels or wind energy can significantly reduce our reliance on natural gas and cut back on resource depletion over time.

Recycle. Making new products requires the use of resources, but recycling helps reuse the materials we already have. Manufacturing fewer new materials reduce waste, which helping decrease groundwater and air pollution. Find a center that accepts items like plastic bottles, cardboard, or aluminum for recycling. Switch to paperless billing and buy recycled paper to limit the need for logging and deforestation.

Compost. Composting is a great way to convert your food scraps into useful materials for your home garden. Composting enriches your soil and reduces the need for watering by improving runoff, which reduces soil erosion. Composting also attracts beneficial organisms that cut down on the need for pesticides or harmful chemicals. Composting encourages sustainability and can lessen the amount of waste and pollution produced by food waste.

Choose reusable goods. Avoiding single-use plastics is another way to conserve resources. Instead of buying water bottles, plastic cups, or paper plates, opt for ceramic, metal, or glassware. Use your own fabric grocery bags rather than plastic bags. Reusing items is a great way to reduce waste and keep excess trash out of landfills.

Manage your thermostat. Heating and air conditioning make up approximately half of your energy bill, but lowering the heat by just two degrees in the winter can help conserve energy in your home. Raising the thermostat two degrees in the summer will also have energy-saving effects and help reduce your monthly bill.

Thrift shop. It can take over 600 gallons of water to make a single cotton t-shirt. Buying secondhand clothing can reduce the amount of reusable clothing that ends up in landfills by extending its lifecycle.

13.

Food preservation, any of a number of methods by which food is kept from spoilage after harvest or slaughter.

a. Heating

The temperature of the food is raised to a level which inhibits the growth of bacteria, inactivates enzymes or even destroys viable bacteria. Traditional wet cooking methods include blanching, boiling, steaming and pressure cooking.

b. Cooling

The temperature of the food is reduced to slow deterioration of the food either through bacterial growth retardation or inactivation of enzymes with deteriorative effects. Traditional cooling methods include refrigeration where temperatures are around 5 °C, and freezing, where temperatures are reduced to below -18 °C (even down to -196 °C in commercial deep freezers).

c.Drying

In drying, the water content of plant foods is reduced to the level where biological reactions (like enzyme activity and microbial growth) are inhibited and the likelihood of food spoilage is thus lowered. Drying may be in the form of freeze-drying (e.g. herbs and coffee), spray-drying (e.g. milk powder), sun-drying (e.g. tomatoes, apricots) or tunnel-drying (e.g. vegetable pieces).

d. Salting

The addition of salt to foods has been used for centuries as a method of food preservation. This method works on the premise that the salt reduces the water activity of the food being preserved, which prevents growth of spoilage organisms.

e.Fermentation

In fermentation, specific yeasts or bacteria are used to give a food its desired flavour and texture, but it is also a way of altering the biochemical characteristics of foods and thereby prevent growth of spoilage micro-organisms.

Yeast fermentation is used in processes such as the baking of bread and the production of alcoholic beverages. Likewise, soy sauce is a result of yeast fermentation.

Advantages of local methods.

-Preserved and improved nutritional quality

-Safety

-Preservation, convenience and choice

-Reducing health inequalities and concerns