BIOLOGY FORM TWO NECTA 2008

Solutions from: Maktaba by TETEA

By Yohana Lazaro

1.

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

2.

i	ii	iii	iv	v	vi	vii	viii	ix	x
False	True	False	True	False	False	True	False	True	True

3.

i	ii	iii	iv	v	vi	vii	viii	ix	x	
C	E	O	J	N	H	T	Q	K	B	

4.(a)human alimentary system.

(b)A-gall bladder

B-pancrese

C-ileum

D-appendix

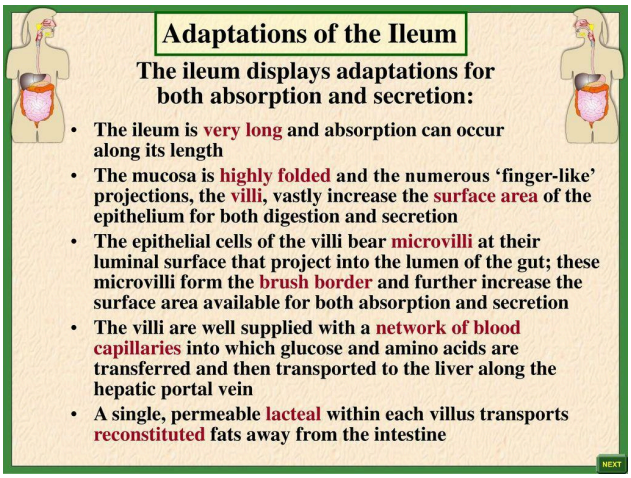
E-colon/late intestine

(c)(i)-pancreatic amylase

-pancreatic lypase

(ii) it secrets gall which hydrolyses lipids into fatty acids and glycerols.

(iii)



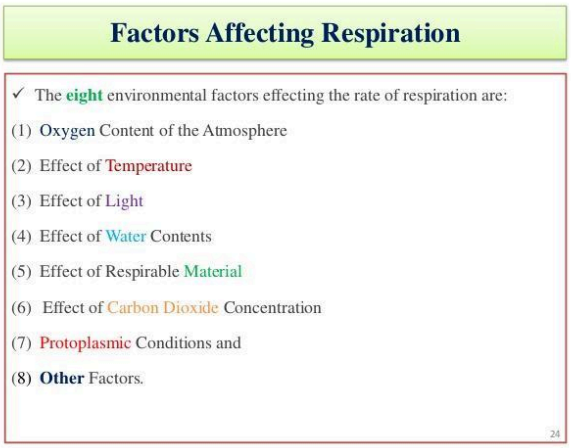
5. (i)Respiration is the process of breaking down food materials in presence of oxygen to give out energy.

(ii)ypes of Respiration

-aerobic Respiration

-anaerobic Respiration.

(b)



(c)

CHARACTERISTICS OF GASEOUS EXCHANGE SURFACE/RESPIRATORY SURFACE

- They have a large SA:VR.
- They are thin
- They are permeable to gases
- They are moist because diffusion across membrane is enhanced when gases are in solution.
- They are highly vascularised for carriage of gases after exchange and thereby maintaining a steep concentration gradient across the respiratory surface.

6(a) Transpiration is the process of the plants to lose water in form of vapours to the atmosphere.

(b) Transpiration is used to cool the plants,remove waste materials,and balances amount of water in the plants.

(c) Difference between onion cell(plant cell) and cheek cell(animal cell).

Plant Cell	**Animal Cell**
Have plastids (e.g. chloroplast)	Do not have plastids
Have a cell wall (cellulose)	Do not have a cell wall
Have a large central vacuole	Have small temporary vacuoles (if any)
Store excess glucose as starch	Store excess glucose as glycogen
Have plasmodesmata	Do not have plasmodesmata
Do not have centrioles	Have centrioles
Do not have cholesterol in cell membrane	Have cholesterol in cell membrane
Generally have a fixed, regular shape	Generally have an amorphous shape

7(a)First aid is an immediate help to a victim before given to the hospital.

(b) Importances of first aid.

-short time to recovery

-bring hope to recovery.

-reduce pains

-prevent risk to infection.

8(a)(i)Food web.

(ii)Food chain

(b) (i)secondary consumer include

-hyena, lions

(ii)primary producers

-grass, shrubs

(c)mucor has a function of decomposing dead matter.

9. AIDS.

HIV is a virus that damages the immune system. Untreated HIV affects and kills CD4 cells, which are a type of immune cell called T cell.

AIDS is a disease that can develop in people with HIV. It's the most advanced stage of HIV. But just because a person has HIV doesn't mean AIDS will develop

-HIV is transmitted through bodily fluids that include:

-blood

-semen

-vaginal and rectal fluids

-breast milk.

Some of the ways HIV is transferred from person to person include:

through vaginal or anal sex — the most common route of transmission

by sharing needles, syringes, and other items for injection drug use

by sharing tattoo equipment without sterilizing it between uses

during pregnancy, labor, or delivery from a pregnant person to their baby

during breastfeeding

through “premastication,” or chewing a baby’s food before feeding it to them

through exposure to the blood, semen, vaginal and rectal fluids, and breast milk of someone living with HIV, such as through a needle stick

Symptoms of AIDS can include:

recurrent fever

chronic swollen lymph glands, especially of the armpits, neck, and groin

chronic fatigue

night sweats

dark splotches under the skin or inside the mouth, nose, or eyelids

sores, spots, or lesions of the mouth and tongue, genitals, or anus

bumps, lesions, or rashes of the skin

recurrent or chronic diarrhea

rapid weight loss

neurologic problems such as trouble concentrating, memory loss, and confusion

anxiety and depression.

steps to help prevent the spread of HIV include:

Avoid sharing needles or other paraphernalia. HIV is transmitted through blood and can be contracted by using materials that have come in contact with the blood of someone who has HIV.

Consider PEP. A person who has been exposed to HIV should contact their healthcare provider about obtaining post-exposure prophylaxis (PEP). PEP can reduce the risk of contracting HIV. It consists of three antiretroviral medications given for 28 days. PEP should be started as soon as possible after exposure but before 36 to 72 hours have passed.

Consider PrEP. A person has a higher chance of contracting HIV should talk to their healthcare provider about pre-exposure prophylaxis (PrEP). If taken consistently, it can lower the risk of acquiring HIV. PrEP is a combination.

10.(a)IMPORTANCES OF BACTERIA IN AGRICULTURE.

-(i) 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 (Eg Clostridium, Pseudomonas and Bacillus have proteolytic enzymes).

-(ii) 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 metabolis.

(b)

Role in Medicine

Product	Microorganism	Uses
Cobalamine(Vit B12)	*Streptomyces olivaceus* *Pseudomonas denitrificans*	Treating perenicious anaemia, food supplement
Streptokinase-streptodornase	*Streptococcus equisimilis*	Dissolving blood clots
Insulin, interferon	Recombinant DNA varieties of E.coli	Human therapy
probiotics	LAB	Restoring stomach microflora
Vaccines against tetanus and diphtheria	Toxoids of *Clostridium tetani (tetanus toxin)* and *Pneumococcus diphtheriae*	vaccination
Antibiotics	Cephalosporin – *Cephalosporium acremonium*	

(c)

Role in Industry

Ref : Peltzar Ch:Indistrial Microbiology

Product	Microorganism	Uses
Acetone-butanol	*Clostridium acetobutyricum*	solvents
2,3-butanediol	*Bacillus polymixa, Enterobacter aerogens*	Solvent,chemical intermediate
Lactic acid	*Lactobacillus bulgaricus, L. delbrueckii*	Textile,laundry,leather industry
Bacterial amylase	*Bacillus subtilis*	Sizing paper, desizing textiles
Bacterial protease	*Bacillus subtilis*	Spot remover,bating hides etc
Lysine	*Micrococcus glutamicus*	Animal feed additive
Bioinsecticide	*Bacillus thuringiensis*	Control of insect pests
Vinegar	*Acetobacter spp*	Food industry
Tobaccoo, tea leaf	*Proteus vulgaris, Bacillus*	curing
Jute	*Bacillus sibtilis*	retting
Oil spill cleaning	*Pseudomonas putida*	Oil spill cleaning