-For example yeast and mushroom.

d) Bacteria (5):

-These are microscopic single-celled organisms.

-They have a cell wall, cell membrane, cytoplasm and plasmids.

-They lack a nucleus but contain circular chromosome of DNA.

-Some bacteria can carry out photosynthesis but most feed off other living or dead organisms.

-For example lactobacillus.

e) Protoctists (3):

-These are microscopic single-celled organisms.

-Some, like amoeba, have features like an animal cell, while others, like chlorella, have chloroplasts and are like plant cells.

-A pathogen example is plasmodium, responsible for causing malaria another example is algae.

## f) Viruses (6):

-These are small particles, smaller than bacteria.

-They are parasitic and can reproduce only inside living cells.

-They infect every type of living organisms.



-They have no cellular structure but have protein cet and contain one type of nucleic acid (DNA on DNA)

"fly" and the HIV virus -For example the influenza virus the causes that causes AIDS.

3) What can pash Nens be?

Futo, Lacteria, protoci ruses.

Section B: Structures and Functions in Living Organisms Chapter 3: Levels of Organisation

1) Define the following levels of organisation within organisms and give 2 examples for each (5):

a) Organelle:

A tiny cell structure that carries out a specific function within the cell, for example mitochondria and chloroplasts.

b) Cell:

Simplest unit of a living organism, for example red blood cell or nerve cell.

c) Tissue:

A group of similar cells doing a common function for example muscle and skin tissue.

d) Organ:

A group of tissue carrying out a particular function for example lungs and heart.

## <u>e) Organ system:</u>

Several organs working together for example respiratory system and digestive system.

## Chapter 4: Cell Structure

1) Draw and label a plant and an animal cell:



<u>a) Carbohydrates (3):</u>

Carbon, hydrogen and oxygen.

b) Proteins (4):

10) Why doesn't a plant cell burst when it is fully turgid? Because its cell wall prevents it from bursting.

11) What does each of the following terms mean?

<u>a) Shrivelled:</u>

When an animal cell contains very little water and shrinks. b) Lysed:

When an animal cell contains a lot of water and expands.

c) Plasmolysed:

When a plant cell contains very little water and shrinks.

d) Flaccid:

When a plant cell contains a normal amount of water.

e) Turgid:

When a plant cell contains a lot of water and expands.

12) What is active transport and does it require energy?

Active transport requires energy to move molecules against their concentration gradient (opposite to diffusion).

13) Where does active transport get its energy from?

Respiration.

Proteins in the cell membrane, also known as proteing unposed of active transport (2):

-Glucose in small intestine.

-Minerals in soil to be transported across the flat root cells e.g. nitrates, supposed phosphates, and otassium.

Dre/ Chapter 7: Nutrition

Nutrition for flowering plants:

1) What do plants do during the night and day?

During the night they respire. During the day they photosynthesise.

2) What is photosynthesis?

It is the process by which plants make food. Light energy is converted into chemical energy in the process.

3) What is the word equation and balanced chemical symbol equation for photosynthesis in a plant?

-Photosynthesis:

Carbon Dioxide + Water → Oxygen + Glucose + Energy.

 $6CO_2 + 6H_2O \rightarrow 6O_2 + C_6H_{12}O_6 + Energy$ 

4) What are the three factors that affect photosynthesis? (3)

Light intensity, temperature and carbon dioxide concentration.

5) How is the structure of the leaf adapted for photosynthesis? (6)

-Water, undigested food, enzymes, dead cells, bile pigments and mucus move through the large intestine.

-Water is removed.

-The remaining material is passed out of the anus as faeces.

19) How does food get transported through your gut?

By muscular contractions called peristalisis.

20) Where are the following enzymes found and what is their function?

a) Amylase and maltase:

-Found in salivary glands, pancreas and small intestine.

-They break down starch to glucose.

b) Protease:

-Found in stomach, pancreas and small intestine.

-They break down proteins to amino acids.

c) Lipase:

-Found in pancreas and small intestine.

-They break down lipids to fatty acids and glycerol.

21) Where is bile produced and stored?

Produced by the liver and stored by the gall bladder.

22) What is the role of bile?

It neutralises stomach acid and helps in dias

lipids. 23) How does the structure of vill the absorption of the products of digestion in the small intertre?

Villi increase the verface area of the investine, this increases absorption.

Chapter 8: Respiration

1) What does the process of respiration do in living organisms?

It releases energy.

2) What is the difference between aerobic and anaerobic respiration?

-Aerobic:

-With oxygen.

-Anaerobic:

-Without oxygen.

3) What is the word and balanced chemical symbol equation for aerobic respiration in living organisms? (2)

-Glucose + Oxygen -> Carbon Dioxide + Water + Energy.

 $-C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + Energy.$ 

4) What is the word equation for anaerobic respiration in animals and in plants? (2)

-The collecting ducts become more permeable to water

23) What is the urine like? (2)

Very dark yellow concentrated urine.

24) What happens when you drink too much? (4)

-You hypothalamus detects this via osmoreceptors.

-Hypothalamus stimulates the pituitary to release less ADH.

-The collecting ducts become less permeable to water.

25) What is the urine like? (2)

Very pale and dilute urine.

## Chapter 12: Coordination and Response

1) Are organisms able to respond to changes in their environment? Yes.

2) What is homeostasis?

Keeping environment inside you at a constant.

3) Name 2 examples of homeostasis (2):

-Water content (osmo-regulation).

<u>Coordination in flowering plants</u> <u>5) What do plants resign Oo</u> Stimuli. -Temperature content (thermo regulation).

22 of 50 us called? 6) What is a respond

Tropism.

7) What are the three types of stimuli plants respond to?

Phototropism (light), hydrotropism (water) and geotropism (gravity).

8) How do plants respond to stimuli?

By growing to or away from them.

9) Which part of the plant is involved with phototropism?

The stem

10) What is positive phototropism?

When something grows in the direction of light.

12) What is negative phototropism?

When something does not grow in the direction of light.

13) What is auxin?

A plant hormone.

14) Where is it made?

In the cells in the tip of a growing shoot.

15) What do they do in a shoot?

The genetics for the trait.

35) In what order to you do a monohybrid cross for something? (7) Parental phenotype, parental genotype, gametes, punnet square, x generation genotype, x phenotype and proportions.

36) What is the outcome of a cross between a homozygous dominant, blue-eyed person and homozygous recessive brown-eyed person? (7)

-Parental phenotype: blue eyes x brown eyes

-Parental genotype: BB x bb

-Gametes: B B x b b

-Punnet square:

	Ь	Ь
В	Bb	Bb
В	Bb	Bb

-F1 genotype: Bb, Bb, Bb, Bb.

 $-F_1$  phenotype: Blue.

-Proportions: 100% blue eyes.

37) What is the outcome of a cross between two of the  $F_1$ 

generation? (7)

Bew from Notesale.co.uk -Parental phenotype: blue eyes x blue eyes

-Parental genotype: Bb x Bb

-Gametes: B b x B b

-Punnet square:

В BB В bo the bb

Page 32 of 50 <u>-F1 genotype:</u> BB, Bb, Bb, bb.

- $F_1$  phenotype: Blue or brown eyes.

-Proportions: 75% blue and 25% brown eyes.

38) Answer these questions on sex cells (5):

a) Where are they made?

-Made in the ovaries and testes.

b) What are they?

-Sperm and egg cell.

c) How many chromosomes do they have?

-23.

d) So what can you call them?

Haploids.

e) What is the making of them called?

Meiosis.

39) Answer these questions on all body cells (6):

a) What are they called?

7) How do you determine it? (3)

Repeat sampling in a certain area at least 5 times. Work out the average number of squares filled with the organism. This is called the percentage cover.

8) What are the two areas in which you can use guadrats to estimate the population size of an organism in two different areas? In the sea and on land.

Chapter 16: Feeding Relationships

1) Define the following terms (9):

<u>a) Produc</u>er (2):

Usually plants. Starts off a food chain.

b) Primary Consumer:

An animal that eats producers.

c) Secondary Consumer:

An animal that eats primary consumers.

d) Terciary Consumer:

Notesale.co.uk An animal that eats secondary consumers.

e) Herbivore:

An animal that only eats plants.

f) Carnivore:

An animal that only eats animals.

g) Omnivore:

An animal the total both animals and

h) D) ornivor:

An animal that is not eaten by anything else.

i) Consumer:

A general word for an "eater".

2) What does  $\rightarrow$  represent?

The flow of energy (direction of energy transfer).

3) What is the function of decomposers and scavengers? (2)

They breakdown dead plants and animals and they break down the waste (faeces) of other organisms.

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4) What would happen if they weren't in the ecosystem? (3)

The plants would not get essential nutrients. Dead matter and waste would pile up. This is called nutrient recycling.

5) Name 2 decomposers (2):

Bacteria and fungi.

6) What is a scavenger?

Animals that find dead animals or plants and then eat them.

7) Name 3 examples of scavengers:

Decomposers break down the body tissues using enzymes. The body looses body mass. These decomposers then release carbon dioxide and mineral ions. How fast they do this depends on the temperature. 43) How do fungi obtain their food?

They secrete extracellular enzymes onto food, which breaks it down. These are then absorbed by the fungus. They use their hyphae to do this and they feed on dead material.

44) What is dead material also known as?

Saprophytic.

45) How does the blood leaving the glomerulus differ from the blood entering the glomerulus?

The blood leaving the glomerulus contains less glucose, less water, fewer amino acids. less urea and fewer salts.

46) What is meant by the term selective reabsorption?

That only some substances are absorbed back into the blood.

47) Name two examples of a vector used in genetic modification.

Virus, plasmid or gene gun.

48) What is a herbicide?

49) Why would a farmer want his crop plants to be resident to a herbicide?

In order to kill weeds without killing

50) Why are some perpie concerned about 61 apps

Crops could direction of chains. We have a tack of control on gene wer the ecosystem. There might be transfeed GM crops coud effects on health.

51) What is a gene?

A gene is a section of a molecule of DNA and codes for a specific protein.

53) How is the green pigment in leaf cells removed safely before testing a leaf for the presence of starch?

Boil it in ethanol using a water bath.

54) Define the following:

a) Population:

The number of an organism.

b) Community:

Different organisms.

c) Habitat:

Where an organism lives.

55) Why would a farmer use a chemical pesticide in his field?

In order to kill and get rid of the pests so that they don't eat the