

Biology

Q1:
What is the word equation for aerobic respiration?

Answer:
Glucose + Oxygen →
Carbon dioxide + water



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Q2:
What is the circulatory system composed of?

Answer:
The heart and blood vessels (arteries, veins & capillaries).



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Q3:
How is glucose transported in plants?

Answer:
In phloem vessels.



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Q4:
Our lungs are full of air sacs, made of alveoli. What adaptations do alveoli have?

Answer:
The walls are thin to allow gases to easily diffuse and they have a good blood supply.



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Q5:
What is the name given to the pore through which gases diffuse into and out of leaves?

Answer:
Stomata



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Q6:
What is gas exchange?

Answer:
The movement of gases into and out of the blood in the lungs.



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Q7:
What is an excretory organ? Give an example.

Answer: An organ that removes waste substances from the body.
Kidney/Lungs/Skin



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Q8:
Give an example of a useful product produced by a micro-organism.

Answer:
Alcohol (for brewing)
Carbon dioxide (in baking bread)
Antibiotics



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Q9:
What are the components of a balanced diet?

Answer: the right amounts of carbohydrates, proteins, fats, vitamins and minerals.



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Q10:

Why do we need carbohydrates? Give an example of a food that contains carbohydrates.

Answer: They provide energy. Cereals, bread, rice and pasta are good sources.



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Q11:

Why do we need protein in our diet? Give an example of a good source of protein.

Answer: For growth and repair. Meats, fish, nuts and dairy are good sources.



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Q12:

Why do we need vitamins and minerals? Which food substances are good sources?

Answer: For health. Fruit and vegetables are good sources.



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Q13: What is a deficiency disease? Give an example and explain what is missing.

Answer: a disease caused by a lack of a vitamin or mineral. E.g. scurvy (lack of vitamin C) or anaemia (lack of iron).



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Q14:

How do food substances enter the bloodstream?

Answer: They are broken down into small, soluble molecules and absorbed through the walls of the small intestine.



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Q15:

What process do plants use to produce food?

Answer: Photosynthesis.



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Q16:

What is the word equation for photosynthesis.

Answer:

Carbon dioxide + water $\xrightarrow{*}$
Glucose + oxygen

* sunlight/chlorophyll needed



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Q17:

How are root hair cells adapted for absorbing water?

Answer: They have a large surface area.



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Q18:

What do plants do with the glucose produced during photosynthesis?

Answer: starch for storage, cellulose for cell walls and to make fats and proteins by combining with other nutrients.



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Q19:
How are organisms classified?

Answer: On the basis of shared characteristics.



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Q20:
What causes variation within a species?

Answer: Environmental and genetic factors.



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Q21:
What is selective breeding?

Answer: A characteristic is selected and only organisms with the best examples of the characteristic are used to breed.



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Q22:
What is genetic modification?

Answer: Putting genes from one species into another.



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Q23:
What are adaptations?

Answer: Features that an organism has that enable them to perform certain functions in their habitats.



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Q24:
What is the difference between a food chain and a food web?

Answer: A food chain shows how energy is transferred from organism to organism. A food web shows how many food chains in a habitat fit together.



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Q25:
What does a pyramid of numbers show?

Answer:
It shows the number of organisms in a food chain.



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Q26:
In the food chain below identify: a consumer; a predator; a herbivore, a producer.

Phytoplankton → krill → penguin → leopard seal → killer whale

Answer:
Consumer: Krill, penguin, leopard seal, killer whale
Predator: penguin, seal, whale
Herbivore: Krill
Producer: phytoplankton

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Q27:
What is behaviour?

Answer: The way that an organism acts or reacts to things around it.



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Q28:

Give an example of an internal stimulus and an external stimulus.

Answer:

Internal: body temperature, substances in the blood.

External: light



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Q29: What is the difference between innate and learned behaviour?

Answer:

Innate behaviours are automatic and do not need to be learnt. Learned behaviours change with time due to experience.



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Q30: What kind of environmental changes can act as external stimuli and what behaviours do they cause?

Answer:

Day/night e.g. nocturnal
Temperature e.g. hibernation or migration



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Q31:

What is social behaviour?
Give an example.

Answer:

A behaviour in which an animal communicates or responds to another member of the same species. E.g. bees - waggle dance, hierarchy/fighting.



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Q32:

What are drugs?

Answer:

Substances that affect the way your body works.



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Q33:

What effects can tobacco smoke have on the body?

Answer:

Nicotine can narrow the arteries. Carbon monoxide and tar can damage the circulatory and respiratory systems.



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Q34:

What effects do stimulants and depressants have on the body?

Answer:

Stimulants increase the speed with which impulses travel through the nervous system. Depressants slow them down.



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Q35:

What does accuracy mean?

Answer:

How close to the true value the answer is.



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Q36:

What does reliability mean?

Answer:

Can the results be repeated?



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Q37:
What are antagonistic muscles?

Answer:
Two muscles that work a joint by pulling in opposite directions.



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Q38:
In a joint, what is the function of the cartilage?

Answer:
To prevent wear between the bone surfaces.



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Q39:
How are sperm cells adapted to their function?

Answer:
The tail helps it to swim. There is little cytoplasm so it has a streamlined shape. The tip of the head contains chemicals to attack the outside of the egg cell.



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Q40:
Where does fertilisation take place?

Answer:
Inside the fallopian tube. (Oviduct).



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Q41:
In which ways can diseases be spread?

Answer:
Touching infected materials
Contaminated food
Droplets from a sneeze
Infected water
Through wounds



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Q42:
What do white blood cells do?

Answer:
They fight disease. One type can engulf microbes and digest them. A second type can produce specific antibodies to attack microbes.



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Q43:
What are antibiotics?

Answer:
Chemicals that can kill bacteria. They do not kill viruses.



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Q44:
What is immunisation?

Answer:
A way of making the body produce antibodies against a particular microbe using an inactive form of the microbe (vaccine). This means that the body will respond quickly if infected.



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Q45:
What is a pathogen?

Answer:
A microorganism that causes disease.



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Q46:
What is a specialised cell?
Give an example.

Answer:
A cell that is adapted to a particular function.
e.g. red blood cell, sperm cell, epithelial cell, palisade cell, neurone, egg cell.



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Q47:
What are the seven life processes?

Answer:
Movement
Respiration
Sensitivity
Growth
Reproduction
Excretion
Nutrition



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Q48:
What are the functions of the following cell parts?

- a) Nucleus
- b) Cytoplasm
- c) Cell membrane

Answer:
a) Contains DNA and controls cell activities
b) Chemical reactions happen here
c) Controls what enters and leaves the cell



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Q49:
What are the functions of the following cell parts?

- a) Cell wall
- b) Vacuole
- c) Chloroplast

Answer:
a) Forms a tough, supportive wall around plant cells
b) Large space containing cell sap
c) Site of photosynthesis



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Q50:
What is the difference between a tissue and an organ?

Answer:
A tissue is a group of the same specialised cells working together. An organ contains 2 or more tissues working together.



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51:
What is fertilisation?

Answer:
Fusing of a male gamete (sex cell) with a female gamete.



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Q52:
Starch and sugar are both carbohydrates. How can they be tested for?

Answer:
Starch - using iodine. Starch produces a blue/black colour.
Sugar - heat with Benedict's reagent. If sugar is present an orange precipitate will form.



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Q53:
The digestive system is a long tube running from the mouth to the anus. What are the functions of the large and small intestines?

Answer:
Large intestine: reabsorbs water from food.
Small intestine: Digestion by enzymes. The soluble products of digestion are absorbed into the bloodstream here.



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Q54:
What is the function of the skeleton?

Answer:
Support
Protection (of vital organs)
Movement (muscles are attached)

