

B3 – Humans & the Environment Quiz

1. Give two functions of air bubbles in a fermenter that grows *Fusarium* fungi used to produce mycoprotein

Temperature maintenance/mixing and aerobic respiration

2. Why is glucose entered to a fermenter that grows *Fusarium* fungi used to produce mycoprotein?

Fuel used in respiration

3. What causes a fermenter to heat up?

Respiration is an exothermic reaction.

4. How is contamination of a fermenter by microorganisms prevented?

Sterilise the fermenter before use; filter the air that enters

5. Farm animals give off large amounts of methane. What is the effect of methane on the atmosphere?

It absorbs energy / heat radiated by Earth. Some of the heat is re-radiated and absorbed by greenhouse gases enhancing the greenhouse effect.

6. Name the process that produces the methane in biogas.

Anaerobic respiration/fermentation

7. Explain how clearing forests and replacing the forests with palm oil trees to produce fuel for motor vehicles will affect the composition of the atmosphere.

Deforestation increases the amount of carbon dioxide in the atmosphere as less is absorbed through photosynthesis/due to burning of the forest. Burning palm oil is carbon neutral.

8. Describe the processes that occur in the biogas generator.

Faeces/manure are broken down by fermentation/anaerobic respiration into methane.

9. Give three ways in which the efficiency of human food production can be increased.

Keep animals indoors so less energy is used to maintain body temperature; restrict movement so less energy is used; shorten the food chain so less energy is lost at each stage

10. Give two ways in which global warming might affect species on a worldwide scale.
Loss of habitat; change in migration routes
11. Why do large supermarkets often import fruits and vegetables from abroad instead of the UK?
Cheaper; available all year
12. Why is importing fruits and vegetables from abroad environmentally damaging?
Longer transport route so more fuel is burnt and more CO₂ added to atmosphere.
13. Explain why rain forests are being burnt to provide land for crops in many parts of the world.
Increased human population and increased standard of living
14. Why does cleared rain forest land often produce crops for only a few years?
The nutrients that are absorbed from the soil are not replaced.
15. What is the principal source of the 'human-made' methane in the atmosphere?
Rice fields
16. Give two reasons why rain forests are being cut down at an increased rate.
Timber demand high due to more housing needs; more farm land is needed
17. How does deforestation affect the composition of the atmosphere?
More carbon dioxide and less oxygen due to less photosynthesis and more decay by microorganisms; burning of wood increases CO₂ as carbon locked up in wood is released; water vapour content reduced as less transpiration takes place
18. Describe how hormones can be used to improve the efficiency of producing food from plants.
Used as a herbicide; control ripening; use to grow many new plants from tissue cultures
19. Give one method by which fish stocks can be preserved.
Fishing quotas, net size, no fishing during breeding season, no fishing in breeding grounds
20. Explain why some consumers will not buy tuna that has been grown on fish farms.
They feel that this is cruel to tuna/unethical or the fish have less flavour/are of poorer quality
21. Explain why the final decision on how many cod the fishermen are allowed to catch may not depend entirely on data produced by scientists.
Big demand for fish; fear for jobs; impact of pressure groups

22. What human activity releases sulphur dioxide into the atmosphere?

Burning fossil fuels

23. What effect does sulphur dioxide have on rain water?

Makes it acidic/lowers the pH

24. What effect does sulphur dioxide have on plants and animals?

Kills plants/trees; lakes become too acidic for animals or plants to grow/survive

25. How do gases produced in towns make lakes much more acidic in country areas?

Gases are blown by wind and spread into the air where they mix with rain water. Acidic rain water deposits into lakes.

26. Give two reasons why it would be better to eat mycoprotein instead of beef.

Mycoprotein contains less fat and more fibre so prevents heart diseases and colon cancer.

27. Give one reason why it would be better to eat beef instead of mycoprotein.

Beef contains more protein so is better for growth and cell repair/enzyme production