Exam Papers Practice

4.3 Aquatic Food Production Systems

Question Paper

Course	SL IB Environmental Systems & Societies (ESS)
Section	4. Water & Aquatic Food Production Systems & Societies
Topic	4.3 Aquatic Food Production Systems
Difficulty	Medium

To be used by all students preparing for
SL IB Environmental Systems & Societies (ESS)
Students of other boards may also find this useful

Question 1a

Aquaculture systems such as fish farming can often release ammonia into the water. The ammonia is converted into nitrates.

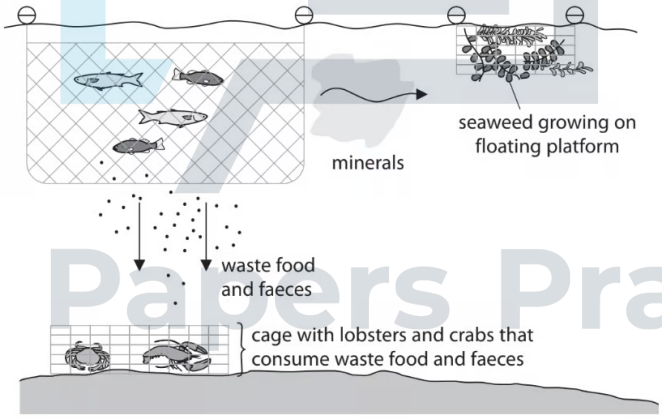
Describe how ammonia is converted into nitrates.

[3 marks]

Question 1b

Multi-trophic level aquaculture is a method of fish farming that has been developed to reduce environmental pollution and increase profits.

The diagram shows a multi-trophic level aquaculture system.



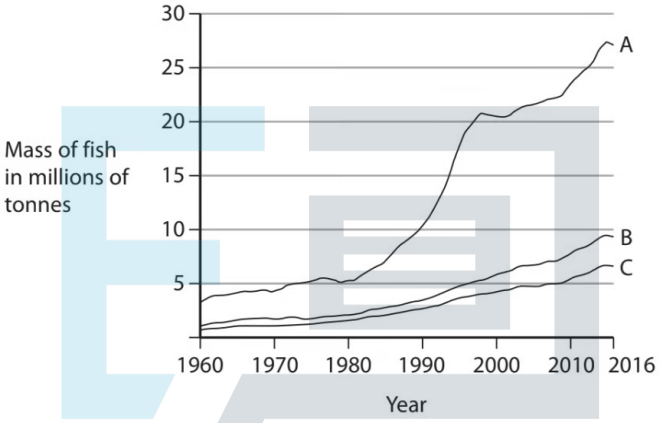
Explain how the multi-trophic level aquaculture system reduces environmental pollution and increases the profits of fish farming.

Use information from the diagram and your own knowledge to support your answer.

[5 marks]

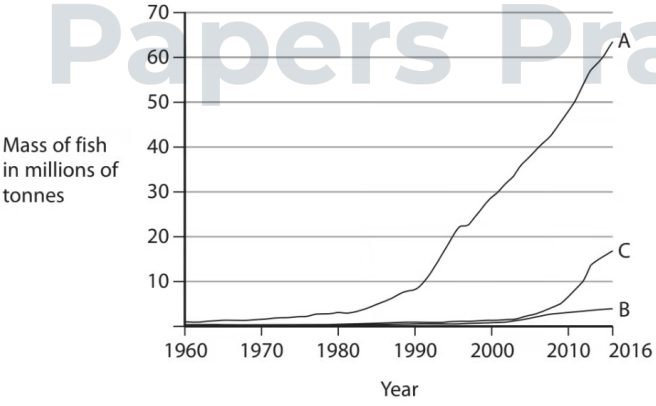
Question 2a

The first graph shows the mass of fish caught by traditional fishing in tonnes from 1960 to 2016 in three countries.



Traditional Fishing

The second graph shows the mass of fish produced by fish farming from 1960 to 2016 in the same three countries.



Fish Farming

Comment on the changes in the mass of fish caught by traditional fishing and the mass of fish produced by fish farming from 1960 to 2016.

Use information from the graphs to support your answer.

[5 marks]

Question 2b

Explain the methods a fish farmer can use to maximise the production of fish.

[4 marks]

Question 3a

Outline **four** strategies that can be used in the management of wild capture fisheries to try and make them more sustainable.

[4 marks]

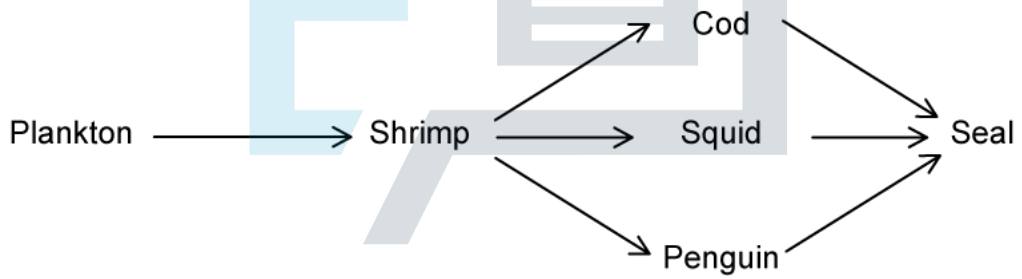
Question 3b

Identify **two** negative environmental impacts of aquaculture.

[2 marks]

Question 4a

The figure below shows an example of a food chain in the Atlantic Ocean.

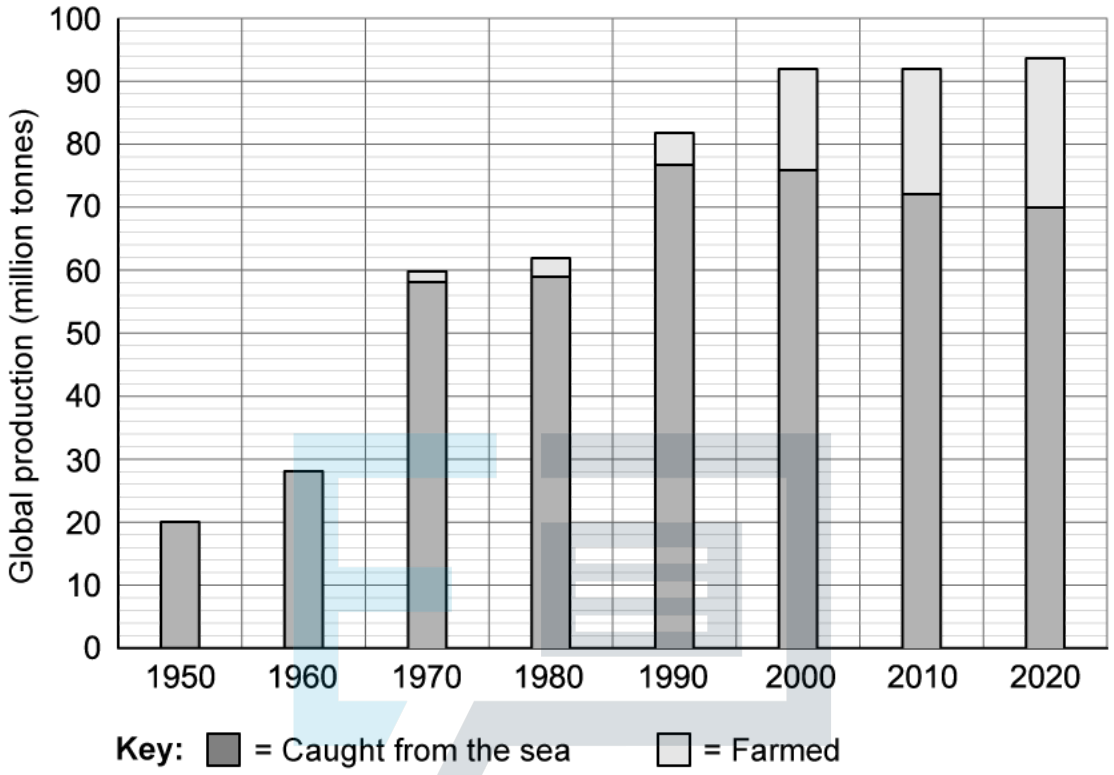


Discuss the impact that would be caused by the extinction of cod in the Atlantic Ocean.

[3 marks]

Question 4b

The figure below shows data on the overall biomass of fish and seafood caught and farmed in the 70 years from 1950 to 2020.



i)

Suggest **two** reasons for the increase in production of farmed fish and seafood between 1950 and 2020.

[2]

ii)

Using the data to calculate the percentage of the total catch made up of farmed fish in 2020.

[2]

[4 marks]