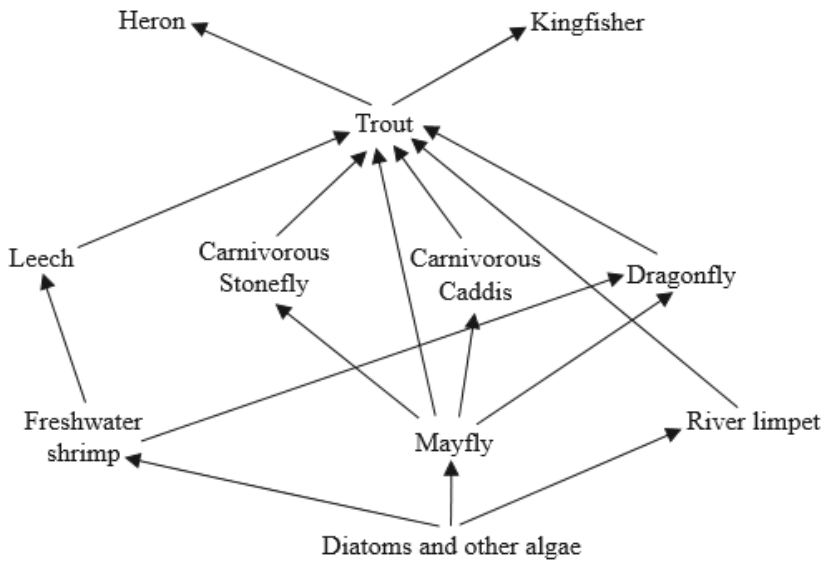


HL Paper 2

The food web below shows some of the feeding relationships found between the organisms living in or near a river in England.



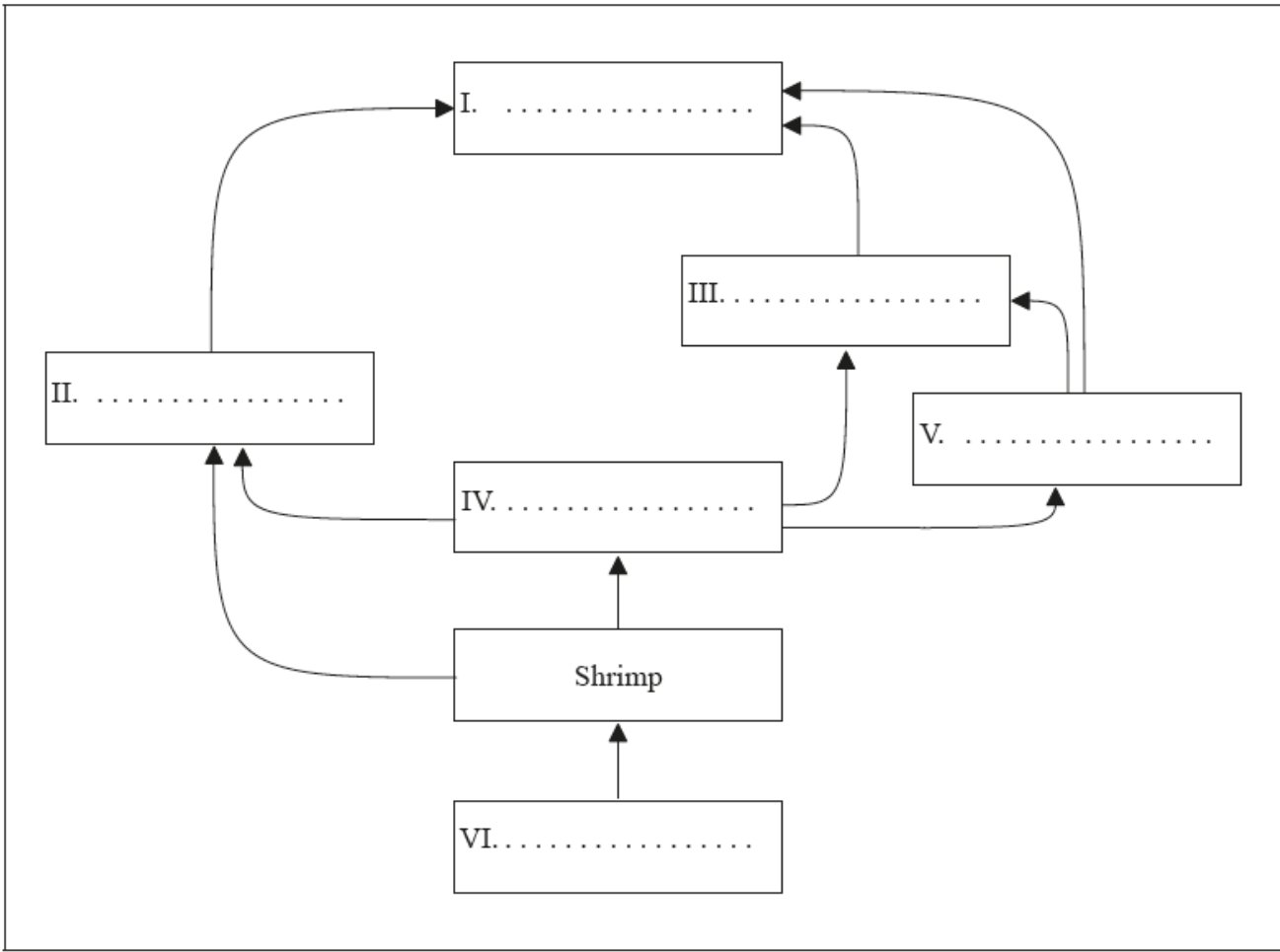
- a (i) Identify an organism in the food web that is an autotroph. [1]
- a (ii) Identify an organism in the food web that is both a secondary and tertiary consumer. [1]
- b. Explain how the flow of energy in the food web differs from the movement of nutrients. [2]
- c. Discuss reasons why the levels of a pyramid of energy differ in size. [2]

The table provides some information about organisms found in an Arctic environment.

Organism	Prey/food	Predators
Arctic cod	Shrimp	Arctic fox, Narwhal, Seal
Arctic fox	Arctic cod, Seal	Polar bear
Narwhal	Arctic cod, Shrimp	Polar bear
Phytoplankton	None	Shrimp
Polar bear	Arctic fox, Narwhal, Seal	None
Seal	Arctic cod	Arctic fox, Polar bear
Shrimp	Phytoplankton	Arctic cod, Narwhal

a. (i) Label the diagram to complete the food web for the organisms in the table above.

[3]



(ii) Deduce the trophic level of Artic cod.

b. Distinguish between the movement of energy and nutrients in an ecosystem.

[2]