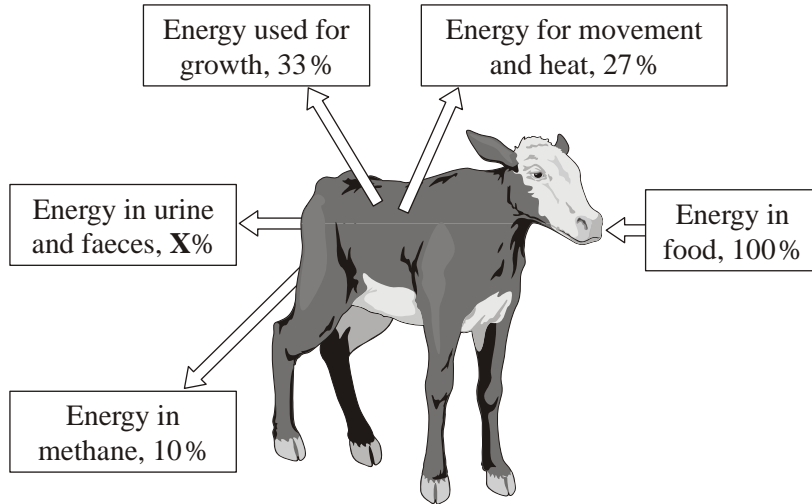


Food production

1. The diagram shows what happens to the energy in the food that a calf eats.



(a) Calculate the % energy lost as urine and faeces (X). Show clearly how you work out your answer.

.....

Energy lost as urine and faeces %

(2)

(b) The energy in the food eaten by the calf in one day is 6 megajoules. Calculate the amount of this energy that would be used for growth. Show clearly how you work out your answer.

.....

Energy used for growth megajoules.

(2)

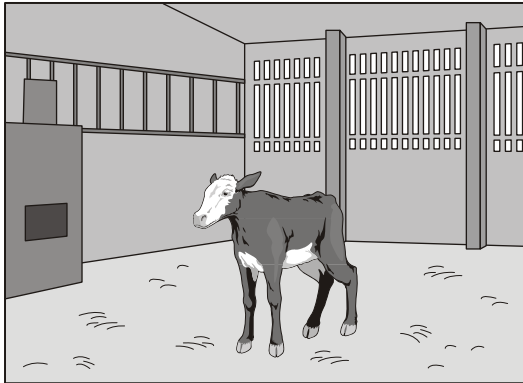
(c) Which process in the body transforms energy in food into heat?

.....

(1)

(d) The pictures show two methods of raising calves indoors. **Method 2** is now banned.

Method 1



Method 2



- (i) Calves raised indoors grow faster than calves raised outdoors.
Suggest **one** reason why.

.....
.....

(1)

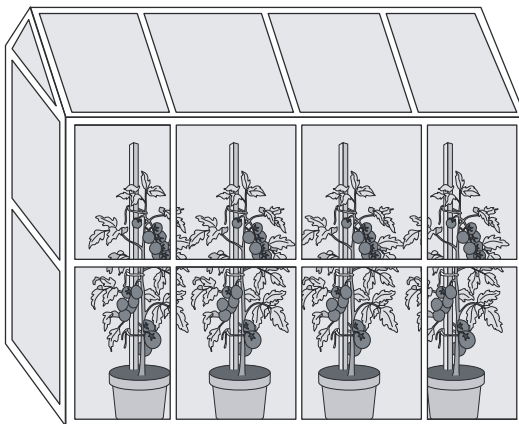
- (ii) **Method 2** was banned after public campaigns.
Suggest **one** reason why people campaigned against this method of rearing calves.

.....
.....

(1)

(Total 7 marks)

2. In this country most tomatoes are grown in greenhouses.



- (a) Suggest **one** way in which a grower could increase the yield of tomatoes from plants growing in his greenhouse.

.....
.....

(1)

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- (b) Large supermarkets often import tomatoes from overseas.
 - (i) Suggest **two** reasons why a supermarket might decide to import tomatoes rather than buy them from British growers.

1

.....

2

.....

(2)

- (ii) Importing tomatoes may be more damaging to the environment than selling tomatoes grown in this country.

Explain why.

.....

.....

(2)

(Total 5 marks)

3. Read the article about sustainable cod fishing.

Every December the European Commission makes proposals for cod fishing quotas in European Union (EU) waters. These quotas take into account data obtained by scientists.

Scientists calculate what proportion of the cod stock is being caught each year. They do this by working out the numbers in each age-group of cod.

Every year the fishermen say the scientists are exaggerating the danger to the stocks in the North Sea. The scientists say the fishermen are threatening their own long-term livelihoods by ignoring their warnings of a collapse of cod populations.

The scientists say that fishermen go only to parts of the sea where there are a lot of cod, so they get the wrong idea of the number of cod in the whole area.

- (a) The scientists and the fishermen have different opinions about the size of the cod population.

Explain why.

.....

.....

(2)

- (b) The final decision on how many cod the fishermen are allowed to catch may not depend entirely on the data produced by the scientists.

Suggest **two** reasons for this.

1.

.....

2.

.....

(2)
(Total 4 marks)