

31 Which technique is **not** used to conserve endangered animal species?

- A** artificial insemination
- B** captive breeding programmes
- C** *in vitro* fertilisation
- D** seed banks

37 Eutrophication results in a reduction in the dissolved oxygen in streams and lakes.

What causes the reduction in dissolved oxygen?

- A** decreased aerobic respiration by decomposers
- B** decreased aerobic respiration by fish
- C** increased aerobic respiration by decomposers
- D** increased aerobic respiration by fish

38 What are reasons for using chemical fertilisers in food production?

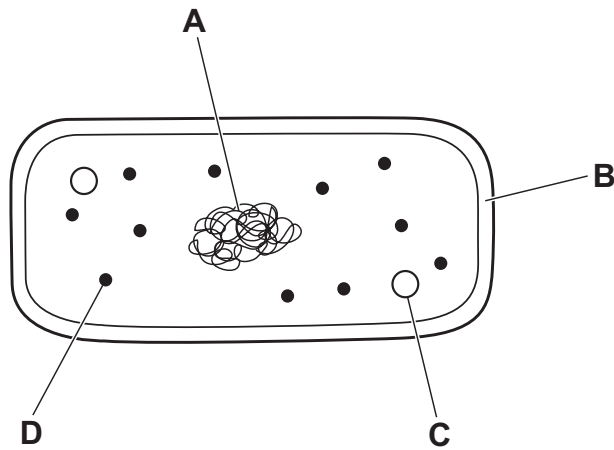
	to reduce the use of herbicides	to increase crop yields	to reduce competition between crops and weeds
A	yes	yes	yes
B	no	yes	no
C	yes	no	no
D	no	no	yes

38 What is an **advantage** of large scale monocultures?

- A** increased biodiversity
- B** increased crop yield
- C** increased susceptibility to disease
- D** increased variation in the crop plant

40 The diagram shows a bacterium.

Which structure is cut to form sticky ends during genetic modification?



4 Steppe ecosystems are large areas of grasslands found in central Asia.

(a) Fig. 4.1 is a food web from a steppe ecosystem.

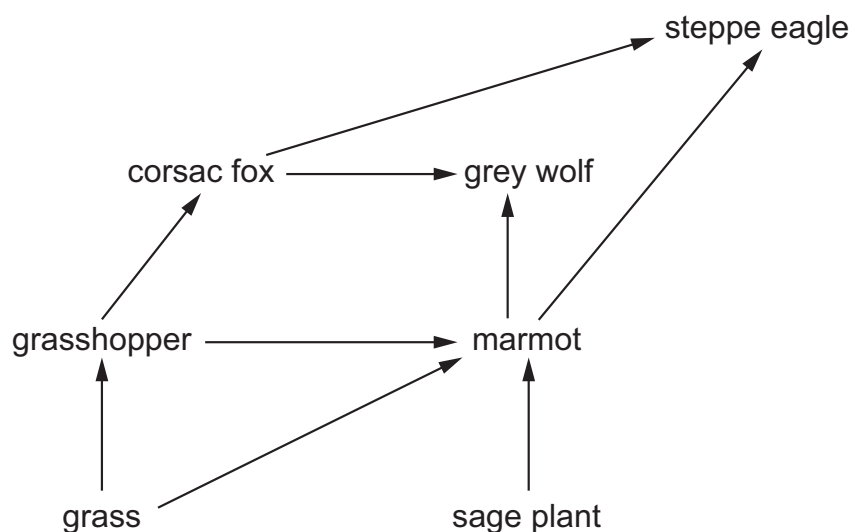


Fig. 4.1

(i) State the name of **one** primary consumer from Fig. 4.1.

..... [1]

(ii) Use the information in Fig. 4.1 to construct **one** food chain with four trophic levels that includes the steppe eagle.

[1]

(iii) There are fewer grey wolves than marmots in this ecosystem.

Explain why the population size of organisms decreases from one trophic level to the next trophic level in this ecosystem.

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..... [2]

- (b) Fig. 4.2 is a photograph of a wild horse. Przewalski's horse is a type of wild horse that nearly became extinct.



Fig. 4.2

After a captive breeding programme, they have been successfully reintroduced to the steppe ecosystem.

The captive breeding programme started with 12 wild horses.

- (i) Explain the risks to a species of a captive breeding programme that uses such a small number of individuals.

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..... [3]

- (ii) Suggest ways of maintaining a population of Przewalski's horse in the wild after their reintroduction to the steppe ecosystem.

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..... [4]

- (c) *In vitro* fertilisation (IVF) can be used in captive breeding programmes.

Fig. 4.3 shows some of the stages involved in IVF.

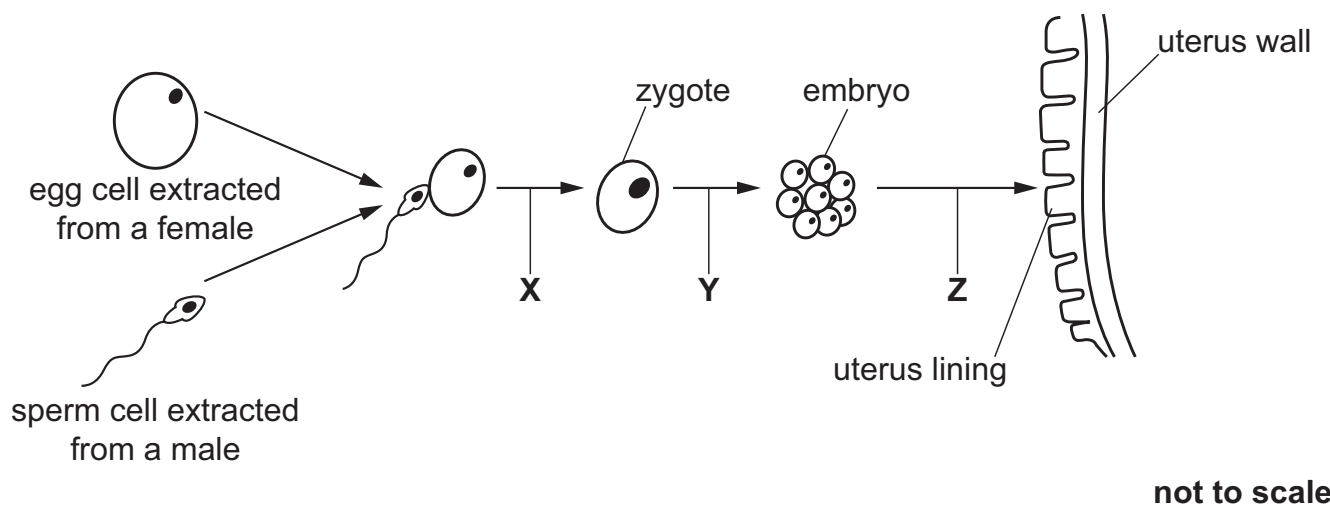


Fig. 4.3

State the names of the processes occurring at X, Y and Z in Fig. 4.3.

X

Y

Z

[3]

[Total: 14]

- 6 In Fig. 6.1, the diagrams of an island show the land covered by forest in 1982 and 2013.

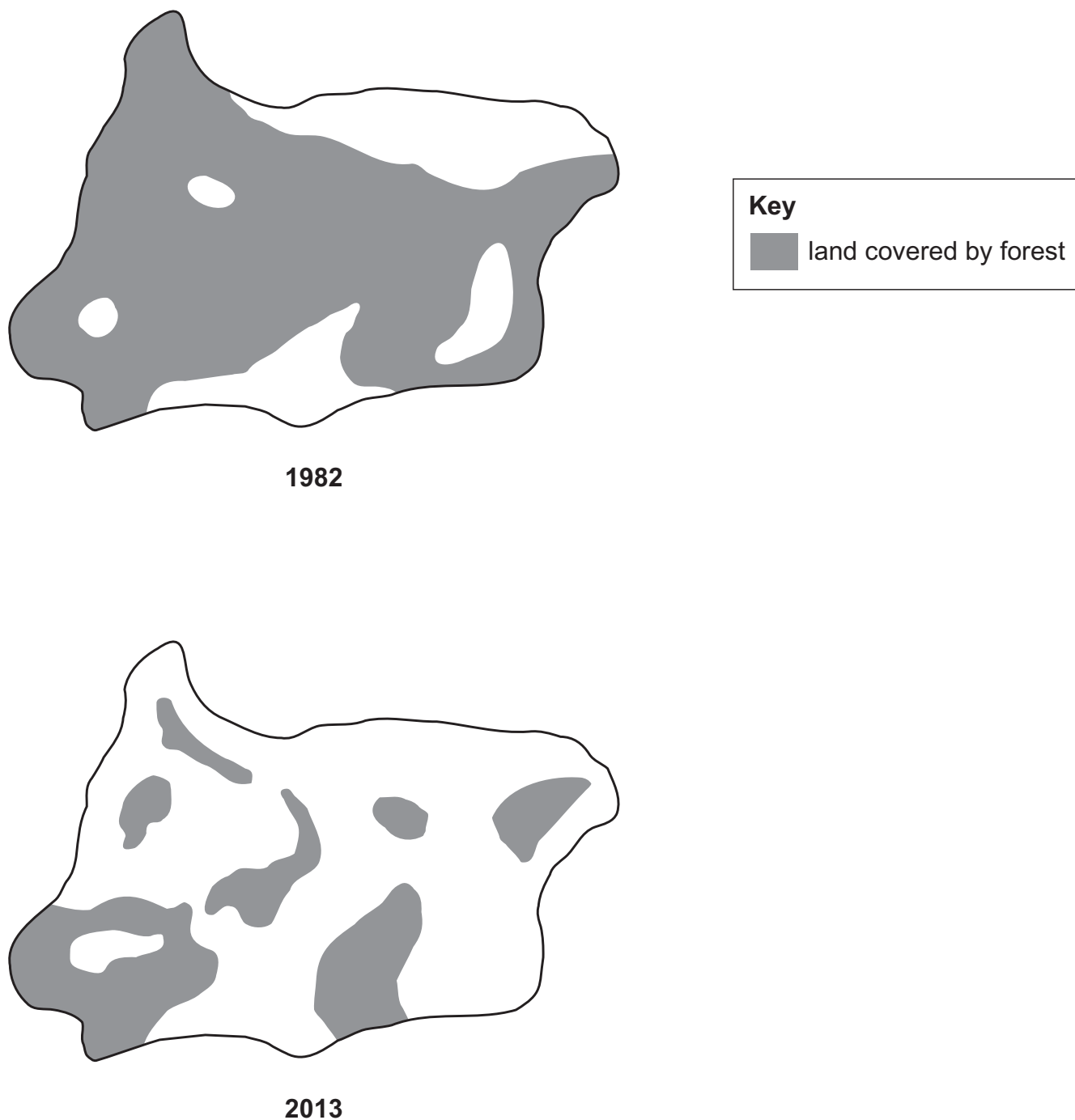


Fig. 6.1

- (a) (i) Describe the change in land covered by forest between 1982 and 2013 in Fig. 6.1.

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..... [2]

(ii) State **two** possible causes for the change in land covered by forest in Fig. 6.1.

1

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2

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[2]

(b) Fig. 6.2 is a diagram of the carbon cycle.

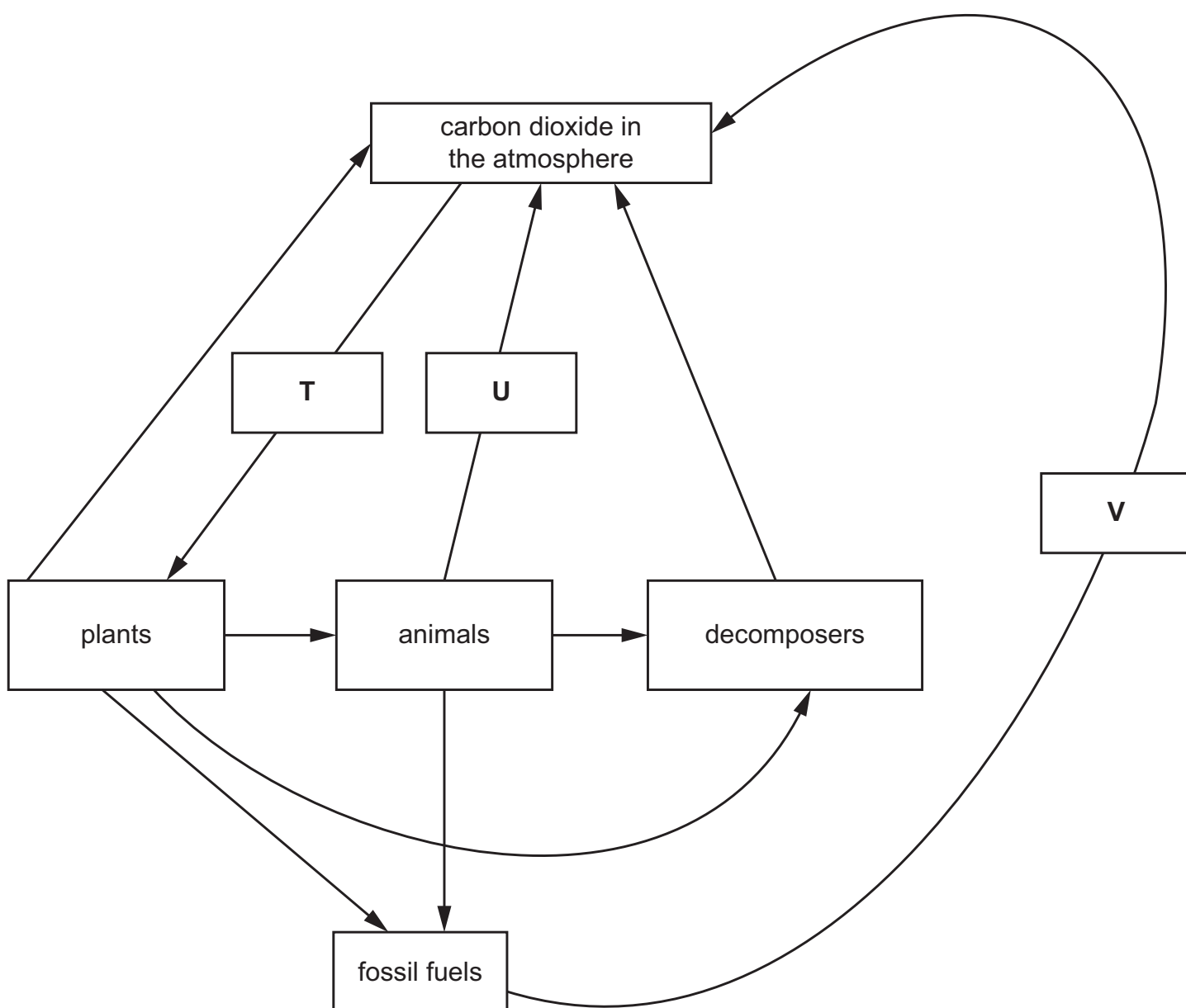


Fig. 6.2

State the names of the processes labelled **T**, **U** and **V** in Fig. 6.2.

T

U

V (7)

(c) Deforestation is linked to an increase in global temperatures.

(i) Explain how deforestation can contribute to an increase in global temperatures.

[3]

(ii) Describe **other** undesirable effects of deforestation.

[3]

[Total: 13]