

33 Which statements about a food chain are correct?

- 1 Between trophic level 1 and trophic level 2, energy is passed from a herbivore to a carnivore.
- 2 Between trophic level 2 and trophic level 3, energy is passed from a primary consumer to a secondary consumer.
- 3 Between trophic level 3 and trophic level 4, energy is passed from a secondary consumer to a tertiary consumer.

A 1 and 3 B 1 only C 2 and 3 D 2 only

38 In which trophic level are herbivores found?

- A primary consumers
 B quaternary consumers
 C secondary consumers
 D tertiary consumers

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

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

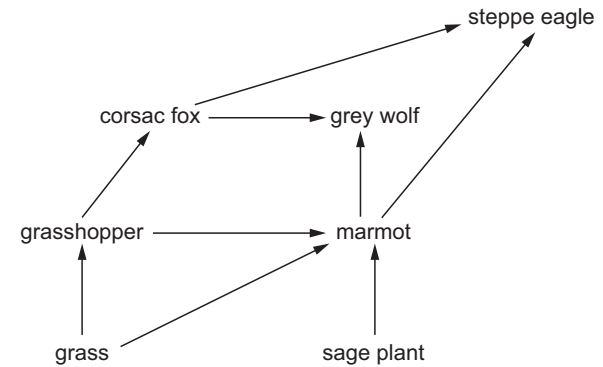


Fig. 4.1

(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.

.....

 [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.

..... [3]

[3]

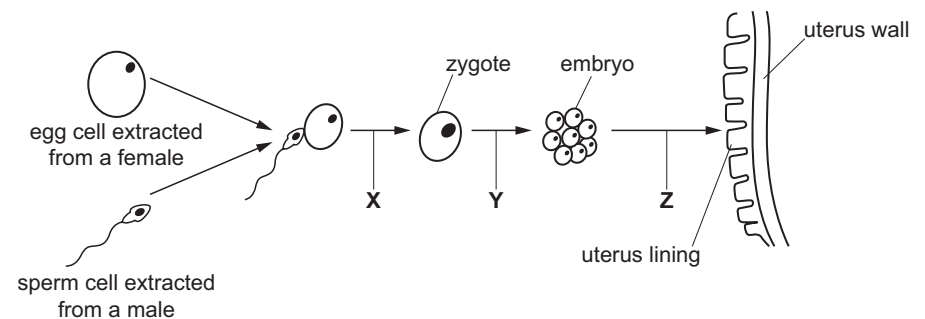
- (ii) Suggest ways of maintaining a population of Przewalski's horse in the wild after their reintroduction to the steppe ecosystem.

..... [4]

[4]

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

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



not to scale

Fig. 4.3

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

X

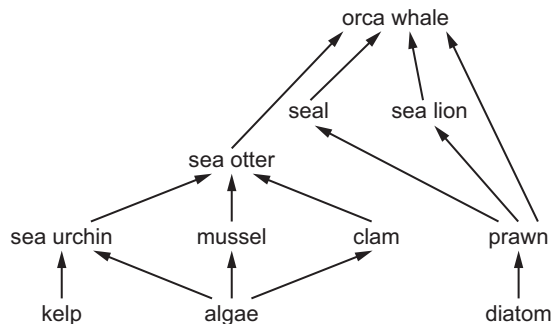
Y

Z

[3]

[Total: 14]

35 The food web shows part of an ocean ecosystem.

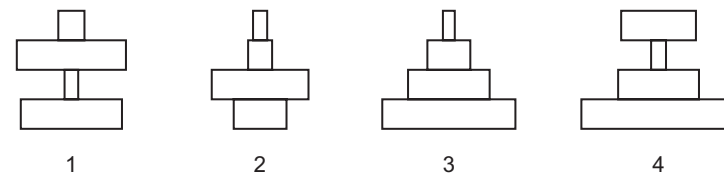


Which row shows the number of secondary consumers and the number of tertiary consumers in the food web?

	number of secondary consumers	number of tertiary consumers
A	three	one
B	four	one
C	three	two
D	four	two

36 In a food chain, zebras are large mammals that eat grass. The zebras have many insects living on them which suck their blood. Birds eat the insects.

The diagrams show some biological pyramids.



Which row identifies the types of pyramids for this food chain?

	pyramid of energy	pyramid of numbers
A	4	2
B	3	2
C	3	1
D	4	1

36 Which organisms can be sources of energy for decomposers?

	producers	herbivores	carnivores
A	✓	✓	✓
B	✓	x	x
C	x	✓	✓
D	x	x	x

key
✓ = yes
x = no