

**10: Human influences on the environment – Topic questions****Paper 3**

The questions in this document have been compiled from a number of past papers, as indicated in the table below.

Use these questions to formatively assess your learners' understanding of this topic.

Question	Year	Series	Paper number
4	2016	November	32
5	2016	November	31
7	2016	June	32

The mark scheme for each question is provided at the end of the document.

You can find the complete question papers and the complete mark schemes (with additional notes where available) on the School Support Hub at [www.cambridgeinternational.org/support](http://www.cambridgeinternational.org/support)

4 (a) (i) Define the term *sustainable resource*.

.....

.....

.....

.....[2]

(ii) State **one** example of a sustainable resource and **one** example of a resource that is not sustainable.

resource that is sustainable .....

.....

resource that is not sustainable .....

.....[2]

(b) Outline how sewage is treated to make the water it contains safe for reuse.

.....

.....

.....

.....

.....

.....[3]

[Total: 7]

- 5 Fish called trout and other fish used to be caught commercially in the Great Lakes of Canada. However, canals built between the lakes before 1900 allowed a predator fish, the lamprey, to enter the lakes.

The lamprey feeds on trout. It caused the fishing industry to collapse.

Fig. 5.1 shows fish catches over 65 years.

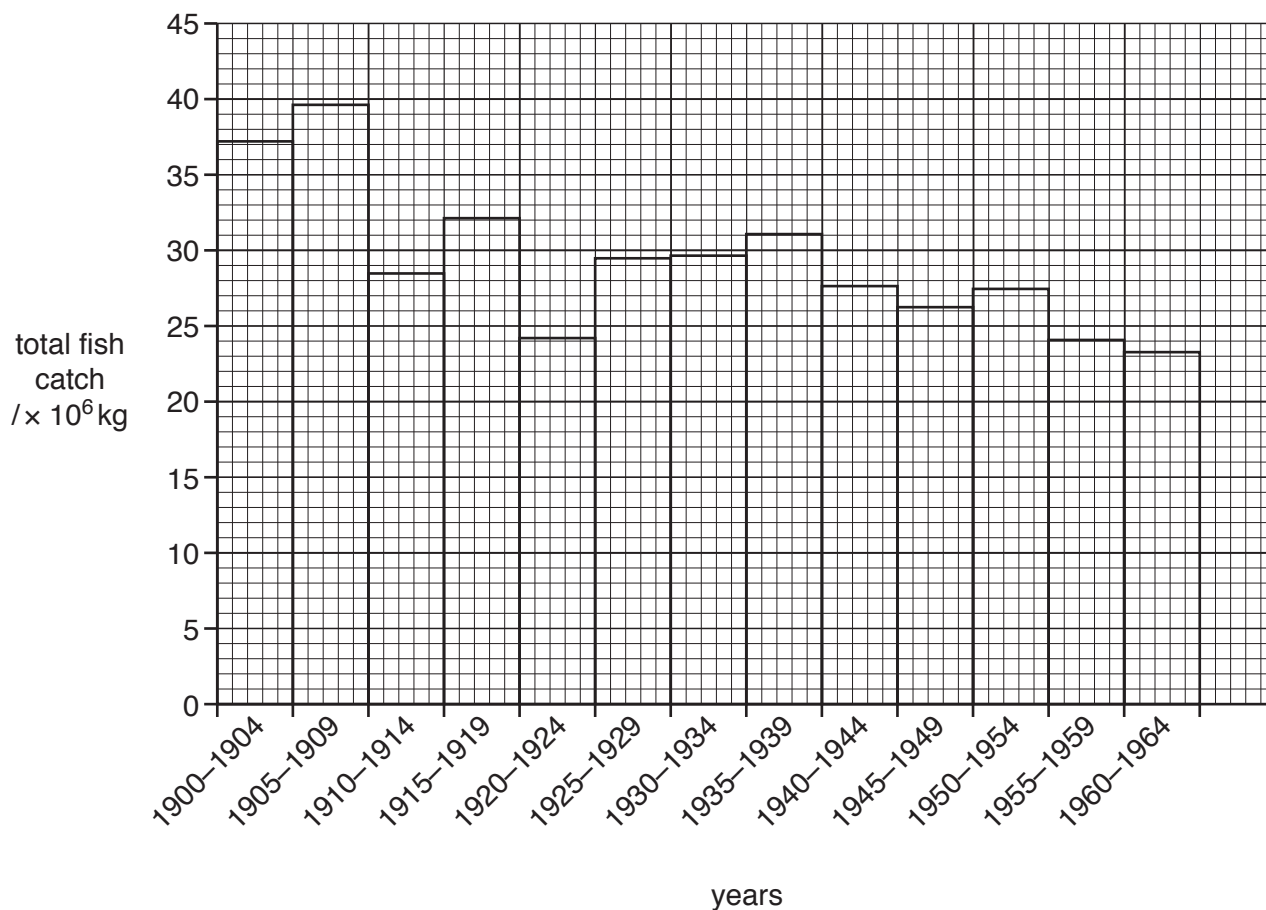


Fig. 5.1

(a) State in which five year period:

- (i) the greatest mass of fish was caught ..... [1]
- (ii) the smallest mass of fish was caught ..... [1]

- (iii) Between 1900 and 1904,  $37.4 \times 10^6$  kg of fish were caught.  
Between 1960 and 1964,  $23.4 \times 10^6$  kg of fish were caught.  
Calculate the reduction in fish catches between 1900 and 1964.  
Show your working.

..... [2]

- (b) In 1944 barriers were placed in the canals to stop lampreys entering the lakes.

Suggest whether the barriers were effective.

Explain your answer.

.....  
.....  
..... [1]

- (c) Studies have shown that human activities can affect trout numbers.

Suggest **three** human activities that could cause the trout numbers to drop.

1 .....  
.....  
2 .....  
.....  
3 .....  
..... [3]

- (d) Describe **two** methods of conserving endangered species.

1 .....  
.....  
2 .....  
..... [2]

[Total: 10]

- 7 Fig. 7.1 shows a newly planted oil palm plantation, with a rainforest in the background. The land on which the oil palms are being grown has been cleared by removing part of the forest.



Fig. 7.1

- (a) (i) State the term used to describe the removal of forests.

.....[1]

- (ii) Removing rainforests puts some species at risk of extinction.

List **three other** undesirable effects of removing rainforests.

1 .....

.....

2 .....

.....

3 .....

.....

[3]

(b) The removal of rainforests has reduced the number of orangutans. Their numbers fell from 315 000 in 1900 to 50 000 in 2014.

(i) Calculate the percentage change in the number of orangutans between 1900 and 2014.

Show your working. Give your answer to the nearest whole number.

.....%

[3]

(ii) Outline **two** ways of conserving the orangutan species.

1 .....

.....

2 .....

.....

[2]

(c) Crop plants such as oil palm plants are often grown as monocultures.

Describe **one** negative impact to the environment of growing plants as monocultures.

.....

.....

.....[1]

[Total: 10]

### Abbreviations used in the Mark Scheme:

;	separates marking points
/	alternatives
I	ignore
R	reject
A	accept (for answers correctly cued by the question, or guidance for examiners)
AW	alternative wording (where responses vary more than usual)
AVP	any valid point
ecf	credit a correct statement / calculation that follows a previous wrong response
ora	or reverse argument
( )	the word / phrase in brackets is not required, but sets the context
<u>underline</u>	actual word given must be used by candidate (grammatical variants excepted)
max	indicates the maximum number of marks that can be given

Question	Answer	Marks
4 (a) (i)	produced / replaced, as rapidly as it is removed; from the environment; so it does not run out;	[2]
4 (a) (ii)	<i>sustainable resource</i> : forests / wood / timber / fish stocks / biofuels; <i>non-sustainable resource</i> : fossil fuels / e.g. of fossil fuel / mineral reserves / ores AVP;	[2]
4 (b)	1 screening / filtering or removal of, solids / large objects; 2 settling or heavy objects / grit, sink to bottom; 3 microbes / bacteria, decompose organic matter in aerobic conditions; 4 aeration; 5 organic material removed by anaerobic microorganisms; 6 chlorine added / UV light / ozone / sterilisation / use of disinfectants / bactericides; 7 distillation;	[3]
[Total: 7]		

Question	Answer	Marks
5 (a) (i)	(most fish) 1905–1909	[1]
5 (a) (ii)	(least fish) 1960–1964	[1]
5 (a) (iii)	$14.0 \times 10^6 \text{ kg}$ $37.4 - 23.4 = 14.0$	[2]
5 (b)	(no) fish catches still dropped / little change in catches / AW;	[1]
5 (c)	pollution / contamination, of lakes / water / sea / rivers; specific example e.g. fertilisers / pesticides / oil / petrol / chemicals / sewage; fishing; lack of food; habitat, destruction / interference; other fish species / predator (birds or animals); disease / parasites; AVP; e.g. global warming / acid rain / eutrophication	[3]
5 (d)	captive breeding program; zoos / reserves / national parks; ban hunting / laws to protect; conserve / protect, habitat AW; remove predators / competitors; educate / awareness / research; idea of ecotourism;	[2]
[Total: 10]		
7 (a) (i)	deforestation	[1]
7 (a) (ii)	habitat destruction / AW ; disruption of food chain ; soil erosion / loss of soil / AW ; flooding ; increase in CO <sub>2</sub> in the atmosphere / less CO <sub>2</sub> absorbed / photosynthesis, by trees / ref. to global warming ;	[max 3]
7 (b) (i)	85% correct working  $\frac{315000 - 50000}{315000} \times 100$ or $\frac{265000}{315000} \times 100$	[3]
7 (b)(ii)	monitoring species; protection of species; monitoring habitat; protection / replenishment, of habitat; ref. to food source; keeping in, zoos / reserves; captive breeding programme; education programme; ecotourism;	[max 2]
7 (c)	loss of biodiversity; less resistance to diseases / pests;	[max 1]
[Total: 10]		