*You should spend about 20 minutes on **Questions 14–26**, which are based on Reading Passage 2 below.*

Mammoth Kill

What Led to the disappearance of the giant mammals? Kate Wong examines the theories

Although it's hard to imagine in this age of urban sprawl and automobiles, North America once belonged to huge, elephant-like mammoths, camels, bear-sized beavers and other giant beasts, collectively known as 'megafauna'. Some 11,000 years ago, however, these large-bodied mammals—about 70 species in all—disappeared. Their demise coincided roughly with the arrival of humans on the continent and dramatic climate change—factors that have inspired several theories about the die-off. Yet despite decades of scientific investigation, the exact cause remains a mystery. Now new findings offer support to one of these controversial hypotheses: that human hunting drove these huge megafauna species to extinction.

This belief resulted in the overkill model which emerged in the 1960s, when it was put forth by Paul S. Martin of the University of Arizona. Since then, critics have charged that no archaeological remains exist to support the idea that the first Americans hunted to the extent necessary to cause these extinctions, but at the annual meeting of the Society of Vertebrate Paleontology in Mexico City in October 1999, specialist John Alroy of the University of California at Santa Barbara argued that, in fact, hunting-driven extinction is not only plausible, it was unavoidable. He has determined, using a computer simulation, that even a very modest amount of hunting would have wiped out these animals.

Assuming an initial human population of 100 people that grew no more than two per cent annually, Alroy determined that, if each band of, say, 50 people killed 15 to 20 large animals a year, humans could have eliminated the animal populations within 1,000 years. Large mammals in particular would have been vulnerable to the pressure because they have longer gestation periods than smaller mammals and their young require extended care.

However, not everyone agrees with Alroy's assessment. For one thing, the results depend on population-size estimates for the extinct animals—estimates that are not necessarily reliable. But a more specific criticism comes from mammal expert Ross D. E. MacPhee of the American Museum of Natural History in New York City, who points out that the relevant archaeological record contains barely a dozen examples of stone points embedded in mammoth bones (and none, it should be noted, are known from other megafaunal remains)—hardly what one might expect if hunting drove these animals to extinction. Furthermore, some of these species had a vast range, covering the whole continent—the Jefferson's ground sloth, for example, lived as far north as the Yukon and as far south as Mexico—which would have made hunting them in numbers sufficient to cause their extinction rather unlikely, he says.

MacPhee agrees that humans most likely brought about these extinctions (as well as others around the world that coincided with human arrival), but not directly. Rather than through hunting, he suggests that people may have introduced a deadly disease, perhaps through their dogs or accompanying vermin, which then spread wildly among the native species because of their low resistance to the new introductions. Repeated outbreaks of a deadly disease could thus quickly drive them to the point of no return. So far, MacPhee does not have empirical evidence for this theory, and it will not be easy to come by: such disease would kill far too quickly to leave its signature on the bones themselves. But he hopes that analyses of tissue and DNA from the most recent animal remains will eventually reveal the microbes responsible.

The third explanation for what brought on this North American extinction does not involve human beings. Instead, its proponents blame the loss on the climate. The Pleistocene epoch in question witnessed considerable climate instability, explains Russell W. Graham of the Denver Museum of Nature and Science. As a result, their regular habitats disappeared, and species that had once formed communities split apart. For some animals, this brought opportunity. For much of the megafauna, however, the increasingly uniform terrain left them with shrinking geographical ranges—a death sentence for large animals, which need correspondingly large ranges. Although these creatures managed to maintain viable populations through most of the Pleistocene period, the final major climate fluctuation pushed them over the edge, Graham says.

For his part, Alroy is still convinced that human hunters were the destroyers of the giant animals. The overkill model explains everything the disease and climate scenarios explain, he asserts, and in addition makes accurate predictions about which species would eventually become extinct.

Complete the summary below.

*Choose **NO MORE THAN TWO WORDS** from the passage for each answer.*

Write your answers in boxes 14–20 on your answer sheet.

Three theories have been put forward to explain the disappearance of the different species of large mammals that inhabited **14** _____ 11,000 years ago. The **15** _____, proposed around fifty years ago by Paul S. Martin, blames **16** _____ by people for mass extinction. Computer calculations seem to support this explanation, but critics question the reliability of the figures they are based on.

The second theory suggests that humans introduced a **17** _____ which wiped out the large mammals. However, so far this theory also lacks any **18** _____.

The final theory suggests that this period experienced significant **19** _____, which eventually led to the loss of habitat and to the division of the **20** _____ that some of the large mammals had organized.

Questions 21–26

Look at the following statements (Questions 21–26) and the list of people below.

*Match each statement with the correct person, **A**, **B** or **C**.*

*Write the correct letter, **A**, **B** or **C**, in boxes 21–26 on your answer sheet.*

***NB** You may use any letter more than once.*

21 Too little evidence exists to support the hunting theory.

22 The bigger the animal, the bigger the territory it requires for survival.

23 Globally, humans have been indirectly responsible for the elimination of many species.

24 Population estimates can be used to understand how large mammals became extinct.

25 Scientific examination of fossil remains may provide some proof for one of the theories.

26 Environmental changes negatively affected the social groupings of some large species.

List of People

A   John Alroy
B   Ross D. E. MacPhee
C   Russell W. Graham

概要填空（14–20）

题号	答案	题干翻译	详细定位与翻译	详细解释
14	**North America**	……栖息在 ＿＿ 的大型哺乳动物（约在一万一千年前）	**第1段**："North America once belonged to huge… Some 11,000 years ago…" → 北美洲曾经属于巨型动物……大约一万一千年前……	题干 "inhabited … 11,000 years ago" 与第1段完全同位，明确是 "North America"。用词需与原文一致，≤2词。
15	**overkill model**	由 Paul S. Martin 在大约50年前提出的 ＿＿ ……	**第2段**："the **overkill model** which emerged in the 1960s, when it was put forth by Paul S. Martin…" → 过度猎杀模型于20世纪60年代提出	概要指代 "该模型"，必须写全为 *overkill model*；仅写 "overkill" 不完整。
16	hunting	将大规模灭绝归咎于人类的 ＿＿	**第1段/第2段**：第1段 "…that human **hunting** drove these huge megafauna species to extinction."；第2段同主题	概要已给出 "by people"，因此答案只需 *hunting*（若写 *human hunting* 会与 "by people" 重复且超出语义所需，但仍≤2词，建议用一词更稳）。
17	deadly disease	第二种理论认为人类带入了一种 ＿＿，从而消灭了大型哺乳动物	**第5段**："people may have introduced a **deadly disease** … which then spread wildly…" → 人类可能带入一种致命疾病	需与原文原词一致的两词搭配。仅写 *disease* 信息不全。
18	empirical evidence	然而目前这种理论也缺乏任何 ＿＿	**第5段**："MacPhee does not have **empirical evidence** for this theory…" → 目前缺乏经验证据	直接照抄原文名词短语。
19	climate instability	最后一种理论认为该时期经历了显著的 ＿＿，最终导致栖息地丧失……	**第6段**："the Pleistocene epoch … witnessed considerable **climate instability**. As a result, their regular habitats disappeared…" → 该时期出现明显的气候不稳定，结果栖息地消失	概要后半句 "eventually led to the loss of habitat" 与第6段因果一致，故选 *climate instability*，而不是同段末的 "climate fluctuation"（那是最后一击，不对应 "栖息地丧失" 的长期过程）。
20	communities	……并导致一些大型哺乳动物已形成的 ＿＿ 被分裂	**第6段**："species that had once formed **communities** split apart." → 物种曾形成的群落/群体分裂	与 "division of the …" 精确对应；名词复数形式与原文一致。

人名配对（21–26）

A John Alroy　**B Ross D. E. MacPhee**　**C Russell W. Graham**

题号	答案	题干翻译	详细定位与翻译	详细解释
21	B	支持"狩猎理论"的证据太少。	**第4段**：MacPhee "...the archaeological record contains **barely a dozen** examples... **hardly what one might expect if hunting** drove these animals to extinction." → 考古记录几乎没有足够证据，远不足以证明"由狩猎导致灭绝"。	只有 MacPhee 系统质疑"狩猎证据太少"；因此选 **B**。
22	C	动物越大，其生存所需领地越大。	**第6段**（Graham）："...a death sentence for **large animals**, which **need correspondingly large ranges**." → 大型动物需要相应更大的活动范围。	直接同义转述 "large animals... correspondingly large ranges"，所以选 **C**。
23	B	在全球范围内，人类**间接**导致了许多物种的消失。	**第5段**（MacPhee）："humans most likely brought about these extinctions (**as well as others around the world**), **but not directly**. Rather than through hunting... introduced a deadly disease."	"全球""间接"两个关键词都只在 MacPhee 的疾病假说中出现：与 "not directly" 精确对应，故选 **B**。
24	A	通过人口估算可以理解大型哺乳动物为何灭绝。	**第3段**（Alroy）："**Assuming an initial human population** of 100... if each band... killed... humans could have eliminated... within 1,000 years."；并见**第2段** "using a **computer simulation**"。	Alroy 通过人口规模与增长率假设＋计算机模拟来解释灭绝机制；因此与 "population estimates can be used to understand..." 吻合，选 **A**。
25	B	对化石遗骸的科学检验可能为某理论提供证据。	**第5段**（MacPhee）："...he hopes that analyses of **tissue and DNA** from the most recent animal remains will eventually reveal the microbes..." → 期待通过**遗骸组织与DNA**分析找到微生物证据。	这是对他"疾病假说"的潜在化石/遗骸证据路径，唯有 MacPhee 提出，选 **B**。
26	C	环境变化对某些大型物种的**社会群体产生了**负面影响。	**第6段**（Graham）："...habitats disappeared, and species that had once formed **communities split apart**." → 栖息地消失，曾经形成的**群落分裂**。	"communities split apart"＝ 社会群体被破坏，明确对应环境变化后果，选 **C**。