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https://www.100test.com/kao_ti2020/276/2021_2022_GMAT_E8_80_83_E8_AF_95_c67_276763.htm Passage 29 Studies of the Weddell seal in the laboratory have described the physiological mechanisms that allow the seal to cope with the extreme oxygen deprivation that occurs during its longest dives, which can extend 500 (5) meters below the ocean ' s surface and last for over 70 minutes. Recent field studies, however, suggest that during more typical dives in the wild, this seal ' s physio-logical behavior is different. In the laboratory, when the seal dives below the (10) surface of the water and stops breathing, its heart beats more slowly, requiring less oxygen, and its arteries become constricted, ensuring that the seal ' s blood remains concentrated near those organs most crucial to its ability to navigate underwater. The seal essentially (15) shuts off the flow of blood to other organs, which either stop functioning until the seal surfaces or switch to an anaerobic (oxygen-independent) metabolism. The latter results in the production of large amounts of lactic acid which can adversely affect the pH of the seal ' s blood (20) but since the anaerobic metabolism occurs only in those tissues which have been isolated from the seal ' s blood supply, the lactic acid is released into the seal ' s blood only after the seal surfaces, when the lungs, liver, and other organs quickly clear the acid from the seal ' s blood- (25) stream. Recent field studies, however, reveal that on dives in the wild, the seal usually heads directly for its prey and returns to

the surface in less than twenty minutes. The absence of high levels of lactic acid in the seal's blood (30) after such dives suggests that during them , the seal's organs do not resort to the anaerobic metabolism observed in the laboratory , but are supplied with oxygen from the blood. The seal's longer excursions underwater , during which it appears to be either exploring distant (35) routes or evading a predator , do evoke the diving response seen in the laboratory. But why do the seal's laboratory dives always evoke this response , regardless of their length or depth ? Some biologists speculate that because in laboratory dives the seal is forcibly (40) submerged , it does not know how long it will remain underwater and so prepares for the worst. 1. The passage provides information to support which of the following generalizations ? (A)

Observations of animals' physiological behavior in the wild are not reliable unless verified by laboratory studies. (B) It is generally less difficult to observe the physiological behavior of an animal in the wild than in the laboratory. (C) The level of lactic acid in an animal's blood is likely to be higher when it is searching for prey than when it's evading predators. (D) The level of lactic acid in an animal's blood is likely to be lowest during those periods in which it experiences oxygen deprivation. (E) The physiological behavior of animals in a laboratory setting is not always consistent with their physiological behavior in the wild. 2. It can be inferred from the passage that by describing the Weddell seal as preparing " for the worst " (line 41) , biologists mean that it (A) prepares to remain underwater for no longer than twenty minutes

(B) exhibits physiological behavior similar to that which characterizes dives in which it heads directly for its prey (C) exhibits physiological behavior similar to that which characterizes its longest dives in the wild. (D) begins to exhibit predatory behavior (E) clears the lactic acid from its blood before attempting to dive

3. The passage suggests that during laboratory dives , the pH of the Weddell seal ' s blood is not adversely affected by the production of lactic acid because (A) only those organs that are essential to the seal ' s ability to navigate underwater revert to an anaerobic mechanism. (B) the seal typically reverts to an anaerobic metabolism only at the very end of the dive (C) organs that revert to an anaerobic metabolism are temporarily isolated from the seal ' s bloodstream (D) oxygen continues to be supplied to organs that clear lactic acid from the seal ' s bloodstream (E) the seal remains submerged for only short periods of time

4. Which of the following best summarizes the main point of the passage ? (A) Recent field studies have indicated that descriptions of the physiological behavior of the Weddell seal during laboratory dives are not applicable to its most typical dives in the wild. (B) The Weddell seal has developed a number of unique mechanisms that enable it to remain submerged at depths of up to 500 meters for up to 70 minutes. (C) The results of recent field studies have made it necessary for biologists to revise previous perceptions of how the Weddell seal behaves physiologically during its longest dives in the wild. (D) Biologists speculate that laboratory studies of the physiological behavior of seals during dives lasting more than twenty minutes

would be more accurate if the seals were not forcibly submerged. (E) How the Weddell seal responds to oxygen deprivation during its longest dives appears to depend on whether the seal is searching for prey or avoiding predators during such dives. 5. According to the author , which of the following is true of the laboratory studies mentioned in line 1 ? (A) They fail to explain how the seal is able to tolerate the increased production of lactic acid by organs that revert to an anaerobic metabolism during its longest dives in the wild. (B) They present an oversimplified account of mechanisms that the Weddell seal relies on during its longest dives in the wild. (C) They provide evidence that undermines the view that the Weddell seal relies on an anaerobic metabolism during its most typical dives in the wild. (D) They are based on the assumption that Weddell seals rarely spend more than twenty minutes underwater on a typical dive in the wild. (E) They provide an accurate account of the physiological behavior of Weddell seals during those dives in the wild in which they are either evading predators or exploring distant routes. 6. The author cites which of the following as characteristic of the Weddell seal ' s physiological behavior during dives observed in the laboratory ? . A decrease in the rate at which the seal ' s heart beats . A constriction of the seal ' s arteries . A decrease in the levels of lactic acid in the seal ' s blood . A temporary halt in the functioning of certain organs (A) and only (B) and only (C) and only (D) , , and only (E) , , and only 7. The passage suggests that because Weddell seals are forcibly submerged during laboratory dives , they do which

of the following ? (A) Exhibit the physiological responses that are characteristic of dives in the wild that last less than twenty minutes. (B) Exhibit the physiological responses that are characteristic of the longer dives they undertake in the wild. (C) Cope with oxygen deprivation less effectively than they do on typical dives in the wild. (D) Produce smaller amounts of lactic acid than they do on typical dives in the wild. (E) Navigate less effectively than they do on typical dives in the wild

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