

## **CR CASELETS – 1**

1. The importance of the ozone layer to terrestrial animals is that it entirely filters out some wavelengths of light but lets others through. Holes in the ozone layer and the dangers associated with these holes are well documented. However, one danger that has not been given sufficient attention is that these holes could lead to severe eye damage for animals of many species. Which one of the following is most strongly supported by the statements above, if they are true?
  - A. All wavelengths of sunlight that can cause eye damage are filtered out by the ozone layer where it is intact.
  - B. Few species of animals live on a part of the earth's surface that is not threatened by holes in the ozone layer.
  - C. Some species of animals have eyes that will not suffer any damage when exposed to unfiltered sunlight.
  - D. A single wavelength of sunlight can cause severe damage to the eyes of most species of animals.
  - E. Some wavelengths of sunlight that cause eye damage are more likely to reach the earth's surface where there are holes in the ozone layer than where there are not.
  
2. One of the most vexing problems in historiography is dating an event when the usual sources offer conflicting chronologies of the event. Historians should attempt to minimize the number of competing sources, perhaps by eliminating the less credible ones. Once this is achieved and several sources are left, as often happens, historians may try, though on occasion unsuccessfully, to determine independently of the usual sources which date is more likely to be right. Which one of the following inferences is most strongly supported by the information above?
  - A. We have no plausible chronology of most of the events for which attempts have been made by historians to determine the right date.
  - B. Some of the events for which there are conflicting chronologies and for which attempts have been made by historians to determine the right date cannot be dated reliably by historians.
  - C. Attaching a reliable date to any event requires determining which of several conflicting chronologies is most likely to be true.
  - D. Determining independently of the usual sources which of several conflicting chronologies is more likely to be right is an ineffective way of dating events.
  - E. The soundest approach to dating an event for which the usual sources give conflicting chronologies is to undermine the credibility of as many of these sources as possible.
  
3. In an experiment, two-year-old boys and their fathers made pie dough together using rolling pins and other utensils. Each father-son pair used a rolling pin that was distinctively different from those used by the other father son pairs, and each father repeated the phrase "rolling pin" each time his son used it. But when the children were asked to identify all of the rolling pins among a group of kitchen utensils that included several rolling pins, each child picked only the one that he had used. Which one of the following inferences is most supported by the information above?
  - A. The children did not grasp the function of a rolling pin.
  - B. No two children understood the name "rolling pin" to apply to the same object.
  - C. The children understood that all rolling pins have the same general shape.
  - D. Each child was able to identify correctly only the utensils that he had used.
  - E. The children were not able to distinguish the rolling pins they used from other rolling pins.
  
4. The increasing complexity of scientific inquiry has led to a proliferation of multi-authored technical articles. Reports of clinical trials involving patients from several hospitals are usually coauthored by physicians from each participating hospital. Likewise, physics papers reporting results from experiments using subsystems developed at various laboratories generally have authors from each laboratory. If all of the statements above are true, which one of the following must be true?
  - A. Clinical trials involving patients from several hospitals are never conducted solely by physicians from just one hospital.
  - B. Most reports of clinical trials involving patients from several hospitals have multiple authors.
  - C. When a technical article has multiple authors, they are usually from different institutions.
  - D. Physics papers authored by researchers from multiple laboratories usually report results from experiments using subsystems developed at each laboratory.
  - E. Most technical articles are authored solely by the researchers who conducted the experiments these articles report.
  
5. Some environmentalists question the prudence of exploiting features of the environment, arguing that there are no economic benefits to be gained from forests, mountains, or wetlands that no longer exist. Many environmentalists claim that because nature has intrinsic value it would be wrong to destroy such features of the environment, even if the economic costs of doing so were outweighed by the economic costs of not doing so. Which one of the following can be logically inferred from the passage?
  - A. It is economically imprudent to exploit features of the environment.
  - B. Some environmentalists appeal to a non-economic justification in questioning the defensibility of exploiting features of the environment.
  - C. Most environmentalists appeal to economic reasons in questioning the defensibility of exploiting features of the environment.

- D. Many environmentalists provide only a non-economic justification in questioning the defensibility of exploiting features of the environment.
- E. Even if there is no economic reason for protecting the environment, there is a sound non-economic justification for doing so.
6. Some argue that laws are instituted at least in part to help establish a particular moral fabric in society. But the primary function of law is surely to help order society so that its institutions, organizations, and citizenry can work together harmoniously, regardless of any further moral aims of the law. Indeed, the highest courts have on occasion treated moral beliefs based on conscience or religious faith as grounds for making exceptions in the application of laws. The statements above, if true, most strongly support which one of the following?
- A. The manner in which laws are applied sometimes takes into account the beliefs of the people governed by those laws.
- B. The law has as one of its functions the ordering of society but is devoid of moral aims.
- C. Actions based on religious belief or on moral conviction tend to receive the protection of the highest courts.
- D. The way a society is ordered by law should not reflect any moral convictions about the way society ought to be ordered.
- E. The best way to promote cooperation among a society's institutions, organizations, and citizenry is to institute order in that society by means of law.
7. Newtonian physics dominated science for over two centuries. It found consistently successful application, becoming one of the most highly substantiated and accepted theories in the history of science. Nevertheless, Einstein's theories came to show the fundamental limits of Newtonian physics and to surpass the Newtonian view in the early 1900s, giving rise once again to a physics that has so far enjoyed wide success. Which one of the following logically follows from the statements above?
- A. The history of physics is characterized by a pattern of one successful theory subsequently surpassed by another.
- B. Long-standing success or substantiation of a theory of physics is no guarantee that the theory will continue to be dominant indefinitely.
- C. Every theory of physics, no matter how successful, is eventually surpassed by one that is more successful.
- D. Once a theory of physics is accepted, it will remain dominant for centuries.
- E. If a long-accepted theory of physics is surpassed, it must be surpassed by a theory that is equally successful.
8. The solidity of bridge piers built on pilings depends largely on how deep the pilings are driven. Prior to 1700, pilings were driven to "refusal," that is, to the point at which they refused to go any deeper. In a 1588 inquiry into the solidity of piers for Venice's Rialto Bridge, it was determined that the bridge's builder, Antonio Da Ponte, had met the contemporary standard for refusal: he had caused the pilings to be driven until additional penetration into the ground was no greater than two inches after twenty-four hammer blows. Which one of the following can properly be inferred from the passage?
- A. The Rialto Bridge was built on unsafe pilings.
- B. The standard of refusal was not sufficient to ensure the safety of a bridge.
- C. Da Ponte's standard of refusal was less strict than that of other bridge builders of his day.
- D. After 1588, no bridges were built on pilings that were driven to the point of refusal.
- E. It is possible that the pilings of the Rialto Bridge could have been driven deeper even after the standard of refusal had been met.
9. Every moral theory developed in the Western tradition purports to tell us what a good life is. However, most people would judge someone who perfectly embodied the ideals of any one of these theories not to be living a good life—the kind of life they would want for themselves and their children. The statements above, if true, most strongly support which one of the following?
- A. Most people desire a life for themselves and their children that is better than a merely good life.
- B. A person who fits the ideals of one moral theory in the Western tradition would not necessarily fit the ideals of another.
- C. Most people have a conception of a good life that does not match that of any moral theory in the Western tradition.
- D. A good life as described by moral theories in the Western tradition cannot be realized.
- E. It is impossible to develop a theory that accurately describes what a good life is.
10. Mystery stories often feature a brilliant detective and the detective's dull companion. Clues are presented in the story, and the companion wrongly infers an inaccurate solution to the mystery using the same clues that the detective uses to deduce the correct solution. Thus, the author's strategy of including the dull companion gives readers a chance to solve the mystery while also diverting them from the correct solution. Which one of the following is most strongly supported by the information above?
- A. Most mystery stories feature a brilliant detective who solves the mystery presented in the story.
- B. Mystery readers often solve the mystery in a story simply by spotting the mistakes in the reasoning of the detective's dull companion in that story.
- C. Some mystery stories give readers enough clues to infer the correct solution to the mystery.
- D. The actions of the brilliant detective in a mystery story rarely divert readers from the actions of the detective's dull companion.

- E. The detective's dull companion in a mystery story generally uncovers the misleading clues that divert readers from the mystery's correct solution.
11. Cézanne's art inspired the next generation of artists, twentieth-century modernist creators of abstract art. While most experts rank Cézanne as an early modernist, a small few reject this idea. Françoise Cachin, for example, bluntly states that such an ascription is "overplayed," and says that Cézanne's work is "too often observed from a modern point of view." Which one of the following statements is most strongly supported by the information above?
- Cézanne's work is highly controversial.
  - Cézanne was an early creator of abstract art.
  - Cézanne's work helped to develop modernism.
  - Modern art owes less to Cézanne than many experts believe.
  - Cézanne's work tends to be misinterpreted as modernist.
12. Light is registered in the retina when photons hit molecules of the pigment rhodopsin and change the molecules' shape. Even when they have not been struck by photons of light, rhodopsin molecules sometimes change shape because of normal molecular motion, thereby introducing error into the visual system. The amount of this molecular motion is directly proportional to the temperature of the retina. Which one of the following conclusions is most strongly supported by the information above?
- The temperature of an animal's retina depends on the amount of light the retina is absorbing.
  - The visual systems of animals whose body temperature matches that of their surroundings are more error-prone in hot surroundings than in cold ones.
  - As the temperature of the retina rises, rhodopsin molecules react more slowly to being struck by photons.
  - Rhodopsin molecules are more sensitive to photons in animals whose retinas have large surface areas than in animals whose retinas have small surface areas.
  - Molecules of rhodopsin are the only pigment molecules that occur naturally in the retina.
13. Flavonoids are a common component of almost all plants, but a specific variety of flavonoid in apples has been found to be an antioxidant. Antioxidants are known to be a factor in the prevention of heart disease. Which one of the following can be properly inferred from the passage?
- A diet composed largely of fruits and vegetables will help to prevent heart disease.
  - Flavonoids are essential to preventing heart disease.
  - Eating at least one apple each day will prevent heart disease.
  - At least one type of flavonoid helps to prevent heart disease.
  - A diet deficient in antioxidants is a common cause of heart disease.
14. Sharks have a higher ratio of cartilage mass to body mass than any other organism. They also have a greater resistance to cancer than any other organism. Shark cartilage contains a substance that inhibits tumor growth by stopping the development of a new blood network. In the past 20 years, none of the responses among terminal cancer patients to various therapeutic measures has been more positive than the response among those who consumed shark cartilage. If the claims made above are true, then each of the following could be true EXCEPT:
- No organism resists cancer better than sharks do, but some resist cancer as well as sharks.
  - The organism most susceptible to cancer has a higher percentage of cartilage than some organisms that are less susceptible to cancer.
  - The substance in shark cartilage that inhibits tumor growth is found in most organisms.
  - In the past 20 years many terminal cancer patients have improved dramatically following many sorts of therapy.
  - Some organisms have immune systems more efficient than a shark's immune system.
15. Good students learn more than what their parents and teachers compel them to learn. This requires that these students derive pleasure from the satisfaction of their curiosity, and one cannot experience such pleasure unless one is capable of concentrating on a topic so intently that one loses track of one's own identity. If the statements above are true, each of the following could also be true EXCEPT:
- Some people who are capable of becoming so absorbed in a topic that they lose track of their own identities are nevertheless incapable of deriving pleasure from the satisfaction of their curiosity.
  - Most good students do not derive pleasure from the satisfaction of their curiosity.
  - Many people who derive pleasure simply from the satisfaction of their curiosity are not good students.
  - Some people who are not good students derive pleasure from losing track of their own identities.
  - Most people who are capable of becoming so absorbed in a topic that they lose track of their own identities are not good students.
16. For a ten-month period, the total monthly sales of new cars within the country of Calistan remained constant. During this period the monthly sales of new cars manufactured by Marvel Automobile Company doubled, and its share of the new car market within Calistan increased correspondingly. At the end of this period, emission standards were imposed on new cars sold within Calistan. During the three months following this imposition, Marvel Automobile Company's share of the Calistan market declined substantially even though its monthly sales within Calistan remained constant at the level reached in the last month of the ten-month period. If the statements above are true, which one of the following CANNOT be true?

- A. The total monthly sales within Calistan of new cars by companies other than Marvel Automobile Company decreased over the three months following the imposition of the emission standards.
- B. Over the three months before the imposition of the emission standards, the combined market share of companies other than Marvel Automobile Company selling new cars in Calistan decreased.
- C. If the emission standards had not been imposed, Marvel Automobile Company would have lost an even larger share of the number of new cars sold in Calistan than, in fact, it did.
- D. A decrease in the total monthly sales of new cars within Calistan will occur if the emission standards remain in effect.
- E. Since the imposition of the emission standards, Marvel Automobile Company's average profit on each new car sold within Calistan has increased.
17. Two things are true of all immoral actions. First, if they are performed in public, they offend public sensibilities. Second, they are accompanied by feelings of guilt. If all the statements above are true, then which one of the following must be false?
- A. Some immoral actions that are not performed in public are not accompanied by feelings of guilt.
- B. Immoral actions are wrong solely by virtue of being accompanied by feelings of guilt.
- C. Some actions that offend public sensibilities if they are performed in public are not accompanied by feelings of guilt.
- D. Some actions that are accompanied by feelings of guilt are not immoral, even if they frequently offend public sensibilities.
- E. Every action performed in public that is accompanied by feelings of guilt is immoral.
18. Journalist: A free marketplace of ideas ensures that all ideas get a fair hearing. Even ideas tainted with prejudice and malice can prompt beneficial outcomes. In most countries, however, the government is responsible for over half the information released to the public through all media. For this reason, the power of governments over information needs to be curtailed. Everyone grants that governments should not suppress free expression, yet governments continue to construct near monopolies on the publication and dissemination of enormous amounts of information. Which one of the following most accurately expresses the conclusion of the journalist's argument?
- A. The freedom of the marketplace of ideas is in jeopardy.
- B. Preserving a free marketplace of ideas is important.
- C. The control that governments have over information needs to be reduced.
- D. Ideas that have malicious content or stem from questionable sources can be valuable.
- E. Governments have near monopolies on the dissemination of many kinds of information.
19. I agree that Hogan's actions resulted in grievous injury to Winters. And I do not deny that Hogan fully realized the nature of his actions and the effects that they would have. Indeed, I would not disagree if you pointed out that intentionally causing such effects is reprehensible, other things being equal. But in asking you to concur with me that Hogan's actions not be wholly condemned I emphasize again that Hogan mistakenly believed Winters to be the robber who had been terrorizing west-side apartment buildings for the past several months. Which one of the following most accurately expresses the conclusion of the argument?
- A. Hogan should not be considered responsible for the injuries sustained by Winters.
- B. The robber who had been terrorizing west-side apartment buildings should be considered to be as responsible for Winters's injuries as Hogan.
- C. The actions of Hogan that seriously injured Winters are not completely blameworthy.
- D. Hogan thought that Winters was the person who had been terrorizing west-side apartment buildings for the last few months.
- E. The actions of Hogan that seriously injured Winters were reprehensible, other things being equal.
20. Last month OCF, Inc., announced what it described as a unique new product: an adjustable computer workstation. Three days later Ergo Tech unveiled an almost identical product. The two companies claim that the similarities are coincidental and occurred because the designers independently reached the same solution to the same problem. The similarities are too fundamental to be mere coincidence, however. The two products not only look alike, but they also work alike. Both are oddly shaped with identically placed control panels with the same types of controls. Both allow the same types of adjustments and the same types of optional enhancements. The main point of the argument is that
- A. the two products have many characteristics in common
- B. ErgoTech must have copied the design of its new product from OCF's design
- C. the similarities between the two products are not coincidental
- D. product designers sometimes reach the same solution to a given problem without consulting each other
- E. new products that at first appear to be unique are sometimes simply variations of other products

### Answer Key

1. E	2. B	3. B	4. B	5. B	6. A	7. B	8. E	9. C	10.C
11.C	12.B	13.D	14.A	15.B	16.A	17.A	18.C	19.C	20.C