

Logical Reasoning**Directions**

Analyze the information on which each question is based, and then choose the most appropriate of the answer choices.

- Guitar strings often go “dead” ____ become less responsive and bright in tone ____ after a few weeks of intense use. A researcher whose son is a classical guitarist hypothesized that dirt and oil, rather than changes in the material properties of the string, were responsible. Which of the following investigations is most likely to yield significant information that would help to evaluate the researcher’s hypothesis?

Determining if a metal alloy is used to make the	Determining whether classical guitarists
A) strings used by classical guitarists	B) make their strings go dead faster than do folk guitarists
Determining whether identical lengths of string ,	Determining whether a dead string and a
C) of the same gauge, go dead at different rates	D) new string produce different qualities of sound
when strung on various brands of guitars	
E) Determining whether smearing various substances on new guitar strings causes them to go dead	
- Most consumers do not get much use out of the sports equipment they purchase. For example, seventeen percent of the adults in the United States own jogging shoes, but only forty-five percent of the owners jog more than once a year, and only seventeen percent jog more than once a week. Which of the following, if true, casts most doubt on the claim that most consumers get little use out of the sports equipment they purchase?

Joggers are most susceptible to sports injuries	Joggers often exaggerate the frequency
A) during the first six months in which they jog.	B) with which they jog in surveys designed to elicit such information.
Many consumers purchase jogging shoes for use in	Consumers who take up jogging often
C) activities other than jogging	D) purchase an athletic shoe that can be used in other sports.
E) Joggers who jog more than once a week are often active participants in other sports as well.	
- Two decades after the Emerald River Dam was built, none of the eight fish species native to the Emerald River was still reproducing adequately in the river below the dam. Since the dam reduced the annual range of water temperature in the river below the dam from 50 degrees to 6 degrees, scientists have hypothesized that sharply rising water temperatures must be involved in signaling the native species to begin the reproductive cycle.

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Which of the following statements, if true, would most strengthen the scientist's hypothesis?

- A) The native fish species were still able to reproduce only inside streams of the river below the dam where the annual temperature range remains approximately 50 degrees.
- B) Before the dam was built, the Emerald River annually overflowed its banks, creating back-waters that were critical breeding areas for the native species of fish.
- C) The lowest recorded temperature of the Emerald River before the dam was built was 34 degrees, whereas the lowest recorded temperature of the river after the dam was built has been 43 degrees.
- D) Nonnative species of fish, introduced into the Emerald River after the dam was built, have begun to compete with the native species.
- E) Five of the fish species native to the Emerald River are not native to any other river in North America.

4. It is true that it is against international law to sell plutonium to countries that do not yet have nuclear weapons. But if United States companies do not do so, companies in other countries will.

Which of the following is most like the argument above in its logical structure?

- A) It is true that it is against the police department's policy to negotiate with kidnappers. But if the police want to prevent loss of life, they must negotiate in some cases.
- B) It is true that it is illegal to refuse to register for military service. But there is a long tradition in the United States of conscientious objection to serving in the armed forces.
- C) It is true that it is illegal for a government official to participate in a transaction in which there is an apparent conflict of interest. But if the facts are examined carefully, it will clearly be seen that there was no actual conflict of interest in the defendant's case.
- D) It is true that it is against the law to burglarize people's homes. But someone else certainly would have burglarized that house if the defendant had not done so first.
- E) It is true that company policy forbids supervisors to fire employees without two written warnings. But there have been many supervisors who have disobeyed this policy.

5. In recent years many cabinetmakers have been winning acclaim as artists. But since furniture must be useful, cabinetmakers must exercise their craft with an eye to the practical utility of their product. For this reason, cabinetmaking is not art.

Which of the following is an assumption that supports drawing the conclusion above from the reason given for

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that conclusion above from the reason given for that conclusion?

- A) Some furniture is made to be placed in museums, where it will not be used by anyone.
- B) Some cabinetmakers are more concerned than others with the practical utility of the products they produced.
- C) Cabinetmakers are more concerned than others with the practical utility of their products than they currently are.
- D) An object is not an art object if its maker pays attention to the object's practical utility.
- E) Artists are not concerned with the monetary value of their products.

6. Although custom prosthetic bone replacements produced through a new computer-aided design process will cost more than twice as much as ordinary replacements, custom replacements should still be cost-effective. Not only will surgery and recovery time be reduced, but custom replacements should last longer, thereby reducing the need for further hospital stays.

Which of the following must be studied in order to evaluate the arguments presented above?

- A) The amount of time a patient spends in surgery versus the amount of time spent recovering from surgery
- B) The amount by which the cost of producing custom replacements has declined with the introduction of the technique for producing them
- C) The degree to which the use of custom replacements is likely to reduce the need for repeat surgery when compared with the use of ordinary replacements
- D) The degree to which custom replacements produced with the new technique are more carefully manufactured than are ordinary replacements
- E) The amount by which custom replacements produced with the new technique will drop in cost as the production procedures become standardized and applicable on a larger scale

7. Extinction is a process that can depend on a variety of ecological, geographical, and physiological variables. These variables effect different species of organisms in different ways, and should; therefore, yield a random pattern of extinction occurs in a surprisingly definite pattern, with many species vanishing at the same time. Which of the following, if true forms the best basis for at least a partial explanation of the patterned extinctions revealed by the fossil record?

- A) Major episodes of extinction can result from widespread environmental disturbances that
- B) Certain extinction episodes selectively affect organisms with particular sets of

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- affect numerous different species
- Some species become extinct because of
- C) accumulated gradual changes in their local environments
- E) Species that are widely dispersed are the least likely to become extinct
- characteristics unique to their species
- In geologically recent times, for which there is no fossil record, human intervention has changed the pattern of extinctions
8. Neither a rising standard of living nor balanced trade, by itself, establishes a country's ability to compete in the international marketplace. Both are required simultaneously since standards of living can rise because of growing trade deficits and trade can be balanced by means of a decline in a country's standard of living. If the facts stand in the passage above are true, a proper test of a country's ability to be competitive is its ability to
- A) Balance its trade while its standard of living rises
- B) Balance its trade while its standard of living falls
- C) Increase trade deficits while its standard of living rises
- D) Decrease trade deficits while its standard of living falls
- E) Keep its standard of living constant while trade deficits rise
9. Certain messenger molecules fight damage to the lungs from noxious air by telling the muscle cells encircling the lungs' airways to contract. This partially seals off the lungs. An asthma attack occurs when the messenger molecules are activated unnecessarily, in response to harmless things like pollen or household dust. Which of the following, if true, points to the most serious flaw of a plan to develop a medication that would prevent asthma attacks by blocking receipt of any messages sent by the messenger molecules referred to above?
- Researchers do not yet know how the body
- A) produces the messenger molecules that trigger asthma attacks
- B) Researchers do not yet what makes one person's messenger molecules more easily activated than another's
- C) Such a medication would not become available for several years, because of long lead times in both development and manufacture
- D) Such a medication would be unable to distinguish between messages triggered by pollen and household dust and messages triggered by noxious air
- E) Such a medication would be a preventative only and would be unable to alleviate an asthma attack once it-had started

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10. Since the routine use of antibiotics can give rise to resistant bacteria capable of surviving antibiotic environments, the presence of resistant bacteria in people could be due to the human use of prescription antibiotics. Some scientists, however, believe that most resistant bacteria in people derive from human consumption of bacterially infected meat. Which of the following statements, if true would most significantly strengthen the hypothesis of the scientists?
- A) Antibiotics are routinely included in livestock feed so that livestock producers can increase the rate of growth of their animals.
- B) Most people who develop food poisoning from bacterially infected meat are treated with prescription antibiotics
- C) The incidence of resistance bacteria in people has tended to be much higher in urban areas than in rural areas where meat is of comparable quality
- D) People who have never taken prescription antibiotics are those least likely to develop resistant bacteria
- E) Livestock producers claim that resistant bacteria in animals cannot be transmitted to people through infected meat
11. The recent decline in the value of the dollar was triggered by a prediction of slower economic growth in the coming year. But that prediction would not have adversely affected the dollar had it not been for the government's huge budget deficit, which must therefore be decreased to prevent future currency declines. Which of the following, if true, would most seriously weaken the conclusion about how to prevent future currency declines?
- A) The government has made little attempt to reduce the budget deficit
- B) The budget deficit has not caused a slowdown in economic growth
- C) The value of the dollar declined several times in the year prior to the recent prediction of slower economic growth
- D) Before there was a large budget deficit, predictions of slower economic growth frequently caused declines in the dollar's value
- E) When there is a large budget deficit, other events in addition to predictions of slower economic growth sometimes trigger declines in currency value
12. Which of the following best completes the passage below? At a recent conference on environmental threats to the North sea, most participating countries favoured uniform controls on the quality of effluents, whether or not pacific environmental damage could be attributed to a particular source of effluent. What must, of course, be shown, in order to avoid excessively restrictive controls, is that-----

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- A) Any uniform controls that are adopted are likely to be implemented without delay
- B) Any substance to be made subject to controls can actually cause environmental damage
- C) The countries favoring uniform controls are those generating the largest quantities of effluents
- D) All of any given pollutant that is to be controlled actually reaches the North sea at present
- E) Environmental damage already inflicted on the north sea is reversible
13. Traditionally, decision making by managers that is reasoned step-by-step has been considered preferable to intuitive decision making. However, a recent study found that top managers used intuition significantly more than did most middle-or lower-level managers. This confirms the alternative view that intuition is actually more effective than careful, methodical reasoning. The conclusion above is based on which of the following assumptions?
- A) Methodical, step-by-step reasoning is inappropriate for making many real-life management decisions
- B) Top managers have the ability to use either unintuitive reasoning or methodical, step-by-step reasoning in making decisions
- C) The decisions made by middle-and lower-level managers can be made as easily by using methodical reasoning as by using intuitive reasoning
- D) Top managers use intuitive reasoning in making the majority of their decisions
- E) Top managers are more effective at decision making than middle-or lower-level managers
14. The imposition of quotas limiting imported steel will not help the American steel mills. In fact, the quotas will help "mini-mills" flourish in the united states. Those small domestic mills will take more business from the big American steel mills than would have been taken by the foreign steel mills in the absence of quotas. Which of the following, if true, would cast the most serious doubt on the claim made in the last sentence above?
- A) Quality rather than price is a major factor in determining the type of steel to be used for a particular application
- B) Foreign steel mills have long produced grades of steel comparable in quality to the steel produced by the big American mills
- C) American quotas on imported goods have often induced other countries to impose similar quotas on American goods
- D) Domestic "mini-mills" consistently produce better grades of steel than do the big American mills

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- Domestic “mini-mills” produce low-volume,
E) specialized types of steels that are not produced
by the big American steel mills.
15. Correctly measuring the productivity of service workers is complex. Consider, for example, postal workers: they are often said to be more productive if more letters are delivered per postal worker. But is this really true? What if more letters are lost or delayed per worker at the same time that more are delivered? The objection implied above to the productivity measure described is based on doubts about the truth of which of the following statements?
- A) Postal workers are representative of service workers in general
- B) The delivery of letters is the primary activity of the postal service
- C) Productivity should be ascribed to categories of workers, not to individuals
- D) The quality of services rendered can appropriately be ignored in computing productivity
- E) The number of letters delivered is relevant to measuring the productivity of postal workers
16. Male bowerbirds construct elaborately decorated nests, or bowers. Basing their judgment on the fact that different local populations of bowerbirds of the same species build bowers that exhibit different building and decorative style, researchers have concluded that the bowerbirds building styles are a culturally acquired, rather than a genetically transmitted, trait. Which of the following, if true, would most strengthen the conclusion drawn by the researchers?
- A) There are more common characteristics than there are differences among the bower-building styles of the local bowerbird population that has been studied most extensively
- B) Young male bowerbirds are inept at bower-building and apparently spend years watching their elders before becoming accomplished in the local bower style
- C) The bowers of one species of bowerbird lack the towers and ornamentation characteristic of the bowers of most other species of bowerbird
- D) Bowerbirds are found only in New Guinea and Australia, where local populations of the birds apparently seldom have contact with one another
- E) It is well known that the song dialects of some songbirds are learned rather than transmitted genetically

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17. A greater number of newspapers are sold in Town S than in Town T. Therefore, the citizens of town S are better informed about major world events than are the citizens of Town T. Each of the following, if true, weakens the conclusion above except:
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| <p>A) Town S has a larger population than town T.</p> <p>C) The average citizen of town S spends less time reading newspapers than does the average citizen of town T</p> <p>E) The average newsstand price of newspapers sold in town S is lower than the average price of newspapers sold in town T</p> | <p>B) Most citizens of town T work in town S and buy their newspapers there</p> <p>D) A weekly newspaper restricted to the coverage of the of local events is published in town S</p> |
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18. A drug that is highly effective in treating many types of infection can, at present, be obtained only from the bark of the ibora, a tree that is quite rare in the wild it takes the bark of 5,000 trees to make one kilogram of the drug. It follows, therefore, that continued production of the drug must inevitably lead to the ibora's extinction. Which of the following, if true, most seriously weakens the argument above?
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| <p>A) The drug made from ibora bark is dispensed to doctors from a central authority</p> <p>C) The leaves of the ibora are used in a number of medical products</p> <p>E) The ibora generally grows in largely inaccessible places</p> | <p>B) The drug made from ibora bark is expensive to produce</p> <p>D) The ibora can be propagated from cuttings and grown under cultivation</p> |
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19. High levels of fertilizer and pesticides, needed when farmers try to produce high yields of the same crop year after year, pollute water supplies. Experts therefore urge farmers to diversity their crops and to rotate their plantings yearly. To receive governmental price-support benefits for a crop, farmers must have produced that same crop for the past several years.. the statements above, if true, best support which of the following conclusions?
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| <p>A) The rules for governmental support of farm prices work against efforts to reduce water pollution</p> <p>C) Farmers can continue to make a profit by rotating diverse crops, thus reducing costs for chemicals, but not by planting the same crop each year</p> | <p>B) The only solution to the problem of water pollution from fertilizers and pesticides is to take farmland out of production</p> <p>D) New farming techniques will be developed to make it possible for farmers to reduce the application of fertilizers and pesticides</p> |
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Governmental price supports for farm products

- E) are set at levels that are not high enough to allow farmers to get out of debt

20. Shelby industries manufactures and sell the same gauges as Jones industries Employee wages account for forty percent of the cost of manufacturing gauges at both Shelby industries and Jones industries. Shelby industries is seeking a competitive advantage over Jones industries. Therefore, to promote this end, Shelby industries should lower employee wages. Which of the following, if true, would most weaken the argument above?

- A) Because they make a small number of precision instruments, gauge manufacturers cannot receive volume discounts on raw materials
- B) Lowering wages would reduce the quality of employee work, and this reduced quality would lead to lowered sales
- C) Jones industries has taken away twenty percent of Shelby industries business over the last year
- D) Shelby industries pays its employees, on average, an percent more than does Jones industries
- E) Many people who work for manufacturing plants live in areas in which the manufacturing plant they work for is the only industry

ANSWERS

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