

## Chapter 1 Test A

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### MULTIPLE CHOICE

**INSTRUCTIONS:** The following selections relate to distinguishing arguments from nonarguments and identifying conclusions. Select the best answer for each.

1. There appears to be a growing happiness gap between men and women. Women today are working more and relaxing less, while men are working less and relaxing more. Forty years ago a typical woman spent 40 minutes more per week than the typical man performing an activity considered unpleasant. Today, with men working less, the gap is 90 minutes and growing.
  - a. Argument; conclusion: Today ... the gap is 90 minutes and growing.
  - b. Nonargument.
  - c. Argument; conclusion: Forty years ago ... an activity considered unpleasant.
  - d. Argument; conclusion: There appears to be ... between men and women.
  - e. Argument; conclusion: Women today are working more and relaxing less.
  
2. Lead is toxic, but do you know why? Lead is toxic mainly because it preferentially replaces other metals in biochemical reactions. In so doing it interferes with the proteins that regulate blood pressure (which can cause development delays in children and high blood pressure in adults), heme production (which can lead to anemia), and sperm production. Lead also displaces calcium in the reactions that transmit electrical impulses in the brain, which diminishes the ability to think and recall information.

Anne Marie Helmstine, "Your Guide to Chemistry"

  - a. Argument; conclusion: It interferes with the proteins ... and sperm production.
  - b. Argument; conclusion: Lead is toxic.
  - c. Nonargument.
  - d. Argument; conclusion: It preferentially replaces other metals in biochemical reactions.
  - e. Argument; conclusion: Lead also displaces calcium ... recall information.
  
3. Aristotle focused on clarifying the concept of virtue itself. He argued that it was virtuous to choose the proper amount of emotion and/or action called for in a particular situation and that extremes of emotion and action were vices. In all communities there are some men of practical wisdom who have the capacity to judge wisely. Aristotle argued that they have the capacity to follow the "right rule" whatever the situation.

David Cooper, *Value Pluralism and Ethical Choice*

  - a. Argument; conclusion: In all communities ... capacity to judge wisely.
  - b. Argument; conclusion: Aristotle focused on clarifying the concept of virtue itself.
  - c. Argument; conclusion: They have the capacity to follow ... the situation.
  - d. Argument; conclusion: He argued that it was virtuous ... were vices
  - e. Nonargument.
  
4. Illegal immigrants pay local sales taxes, and many of them also pay state, local, and federal income tax and Social Security tax. They also purchase items from local merchants, increasing the amount these merchants pay in taxes. In addition, they work for low salaries, which increases the earnings of their employers and the amount of taxes these employers pay. Thus, it is not correct to say that illegal immigrants contribute nothing to the communities in which they live.
  - a. Argument; conclusion: It is not correct to say ... communities in which they live.

- b. Argument; conclusion: They work for low salaries ... these employers pay.
  - c. Argument; conclusion: Illegal immigrants pay ... Social Security tax.
  - d. Argument; conclusion: They also purchase items ... pay in taxes.
  - e. Nonargument.
5. Numerous studies have indicated that women of color, black women in particular, are over-arrested, over-indicted, and over-sentenced. African-American women are seven times more likely to be arrested for prostitution than women of other ethnic groups. Black women have received significantly longer sentences for crimes against property and served longer periods in prison. For both murder and drug offenses, Euroamerican women ended up serving one-third less time for the same offenses than black women.
- Nancy Kurshan, "Women and Imprisonment in the U.S."
- a. Argument; conclusion: African-American women ... other ethnic groups.
  - b. Nonargument.
  - c. Argument; conclusion: For both murder and drug offenses ... black women.
  - d. Argument; conclusion: Numerous studies have indicated ... over-sentenced.
  - e. Argument; conclusion: Black women have received ... longer periods in prison.
6. It's even more important these days that your computer be protected by a firewall. There are criminal elements lurking in the shadows of cyberspace who send out probes to detect unprotected PCs. Once a vulnerable computer is found, these criminals install software that assists them in committing identity theft and fencing stolen IDs. They also defraud online advertisers by using these zombie computers to visit pay-per-click ads.
- a. Argument; conclusion: There are criminal elements ... to detect unprotected PCs.
  - b. Argument; conclusion: Once a vulnerable computer ... fencing stolen IDs.
  - c. Nonargument.
  - d. Argument; conclusion: They also defraud ... to visit pay-per-click ads.
  - e. Argument; conclusion: It's even more important ... protected by a firewall.
7. The earth is of interest to astronomy for many reasons. Nearly all observations must be made through the atmosphere, and the phenomena of the upper atmosphere and the magnetosphere reflect the state of interplanetary space. The earth is also the most important object of comparison for planetologists.
- Hannu Karttunen, *et al.*, *Fundamental Astronomy*
- a. Argument; conclusion: The phenomena ... state of interplanetary space.
  - b. Argument; conclusion: The earth is also ... for planetologists.
  - c. Argument; conclusion: The earth is of interest to astronomy.
  - d. Nonargument.
  - e. Argument; conclusion: Nearly all observations ... through the atmosphere.
8. If the trade in tiger products is banned, tiger reserves are guarded by well equipped staff, communities abutting tiger habitat are given a stake in protecting tigers, and the makers of traditional medicines can be persuaded that tiger parts are not needed, then tiger poaching will be halted, habitat and life sustaining prey will be restored, and the immanent extinction of tigers in the wild will be averted.
- a. Nonargument.
  - b. Argument; conclusion: The trade in tiger products is banned.
  - c. Argument; conclusion: Tiger poaching will be halted.
  - d. Argument; conclusion: The makers of traditional medicines ... not needed.

- e. Argument; conclusion: Tiger poaching will be halted ... will be averted.
9. Humans are biological organisms. To understand our behavior and mental processes, we need to understand their biological underpinnings, starting with the cellular level, the neuron. How we feel, learn, remember, and think all stem from neuronal activity. So, how a neuron works and how neurons communicate are crucial pieces of information in solving the puzzle of human behavior and mental processing.
- Richard Griggs, *Psychology: A Concise Introduction*
- a. Argument; conclusion: To understand our behavior ... the neuron.
- b. Argument; conclusion: Humans are biological organisms.
- c. Argument; conclusion: How we feel ... neuronal activity.
- d. Argument; conclusion: How a neuron works ... mental processing.
- e. Nonargument.
10. Viruses are acellular entities too small to be seen with a light microscope. They are composed of a nucleic acid and a few proteins. Viruses replicate themselves and display other properties of living organisms only when they have invaded living cells. Indeed, some viruses can be crystallized and stored in a container on a shelf for years, but they retain the capacity to invade cells and cause disease.
- Jacquelyn C. Black, *Microbiology: Principles and Explorations*
- a. Argument; conclusion: They are composed of a nucleic acid and a few proteins.
- b. Nonargument.
- c. Argument; conclusion: Viruses are acellular entities ... microscope.
- d. Argument; conclusion: Indeed, some viruses can be crystallized ... cause disease.
- e. Argument; conclusion: Viruses replicate themselves ... invaded living cells.
11. Harnessing the clean, abundant energy of the sun and wind is critical to solving the global warming problem. Technological advances have brought the cost of electricity generated by the wind down by 82 percent since 1981. Solar energy technology has made remarkable progress as new photovoltaic cells have been developed to convert even greater amounts of sunlight directly into electricity. Today the costs of wind and solar power are becoming competitive with dirty coal-fired plants.
- Sierra Club, "Global Warming Solutions"
- a. Argument; conclusion: Today the costs of wind ... dirty coal-fired plants.
- b. Argument; conclusion: Technological advances ... by 82 percent since 1981.
- c. Argument; conclusion: Harnessing the clean ... the global warming problem.
- d. Nonargument.
- e. Argument; conclusion: Solar energy technology ... directly into electricity.
12. It is likely that innocent prisoners in this country have been executed for crimes they did not commit. From 1973 until 2007, 124 death row inmates have been exonerated. In many of these cases DNA evidence played a crucial role. Yet, in that same time frame, more than 1000 prisoners were executed. For many of these prisoners no DNA evidence was available. If such evidence had been available, how many more would have been exonerated?
- a. Argument; conclusion: In many of these cases ... played a crucial role.
- b. Nonargument.
- c. Argument; conclusion: From 1973 ... have been exonerated.
- d. Argument; conclusion: For many of these prisoners ... was available.
- e. Argument; conclusion: It is likely that innocent prisoners ... they did not commit.

ANS: E

13. Some over-the-counter medicines should not be given to very young children. For example, cold medicines contain decongestants and antihistamines. These substances raise blood pressure and heart rate. If an overdose should occur in a young child, the result can be fatal.
- Argument; conclusion: Some over-the-counter medicines ... very young children.
  - Argument; conclusion: These substances raise blood pressure and heart rate.
  - Argument; conclusion: If an overdose ... the result can be fatal.
  - Argument; conclusion: Cold medicines contain decongestants and antihistamines.
  - Nonargument.
14. The world-wide disappearance of frogs may be the result of agricultural runoff. Scientists have shown that runoff rich in fertilizer causes a pronounced increase in the algae of lakes and ponds. Snails then gorge themselves on the algae, causing parasites living inside them to produce huge quantities of eggs. When the eggs hatch, the parasites infect young frogs, causing severe deformation of their limbs.
- Nonargument.
  - Argument; conclusion: Snails then gorge themselves ... huge quantities of eggs.
  - Argument; conclusion: The world-wide disappearance ... agricultural runoff.
  - Argument; conclusion: When the eggs hatch ... severe deformation of their limbs.
  - Argument; conclusion: Scientists have shown ... in the algae of lakes and ponds.
15. Little is known of the Greek physician Hippocrates, who lived around 400 B.C. Nevertheless, the writings attributed to him have provided a number of principles underlying modern medical practice. One of his most famous contributions, the Hippocratic Oath, is the foundation of contemporary medical ethics. It requires the physician to swear that he or she will help the sick, refrain from intentional wrongdoing, and keep confidential all matters pertaining to the doctor-patient relationship.
- William C. Cockerham, *Medical Sociology*
- Argument; conclusion: The writings attributed to him ... medical practice.
  - Nonargument.
  - Argument; conclusion: It requires the physician ... doctor-patient relationship.
  - Argument; conclusion: One of his most famous contributions ... medical ethics.
  - Argument; conclusion: Little is known ... who lived around 400 B.C.
16. Two million children have been killed in armed conflicts in the last decade. Three times as many have been injured or permanently disabled. Millions of others have been forced to take part in or witness horrifying acts of violence. In countless cases the impact of armed conflict on children's lives remains invisible. The children themselves may be removed from the public, in institutions, or survive as victims of prostitution. But those who have lost parents often experience humiliation, rejection and discrimination, and suffer in silence as their self-esteem crumbles.
- Child Rights Information Network
- Nonargument.
  - Argument; conclusion: Two million children ... in the last decade.
  - Argument; conclusion: But those who have lost parents ... self-esteem crumbles.
  - Argument; conclusion: In countless cases ... remains invisible.
  - Argument; conclusion: Three times as many ... permanently disabled.

17. An element is a collection of atoms of the same type. Each atom contains three fundamental particles—a proton, a neutron, and an electron. The protons and neutrons are in the center, or nucleus, of the atom. Protons have a positive charge, while neutrons have no electric charge. The electrons have a negative charge and orbit about the nucleus at a specific distance.
- Edward F. Albin, *Earth Science Made Easy*
- a. Argument; conclusion: An element is a collection of atoms of the same type.
  - b. Argument; conclusion: The electrons have a negative charge ... specific distance.
  - c. Nonargument.
  - d. Argument; conclusion: Each atom contains ... an electron.
  - e. Argument; conclusion: The protons and neutrons ... of the atom.

**INSTRUCTIONS:** The following problems relate to identifying and evaluating inductive and deductive arguments. Select the best answer for each.

18. If the Big Bang theory is correct, then the universe is billions of years old. And if the Big Bang theory is correct, then the universe was not created in six days. Thus, if the universe is billions of years old, then it was not created in six days.
- a. Deductive, valid.
  - b. Inductive, strong.
  - c. Inductive, cogent.
  - d. Inductive, weak.
  - e. Deductive, invalid.
19. The engraved plate beneath this painting in the art museum says "Monet." Therefore, the painting must be the work of Monet.
- a. Inductive, cogent.
  - b. Inductive, weak.
  - c. Deductive, valid.
  - d. Inductive, strong.
  - e. Deductive, invalid.
20. Canada is similar in many ways to the United States. Both countries share the same language, values, and a free market economy. Also, they share a common border. Therefore, the Canadian flag must look a lot like the U.S. flag.
- a. Inductive, weak.
  - b. Deductive, invalid.
  - c. Inductive, strong.
  - d. Deductive, sound.
  - e. Deductive, valid.
21. Either Bill Clinton or George W. Bush was president when the World Trade Center towers were destroyed. But Bush was not president at that time. Therefore, Bill Clinton was president when those buildings were destroyed.
- a. Inductive, invalid.
  - b. Deductive, valid.
  - c. Deductive, invalid.
  - d. Inductive, strong.

- e. Inductive, weak.
22. As the universe expands, it gets colder and colder. Furthermore, this expansion will continue for ever and ever. Therefore, at some point in the future the universe will become too cold to support human life, and all humans will perish.
- Deductive, invalid.
  - Deductive, valid.
  - Deductive, sound.
  - Inductive, strong.
  - Inductive, weak.
23. No drug cartels are legal operations, so no legal operations are enterprises that engage in smuggling, because all drug cartels are enterprises that engage in smuggling.
- Deductive, valid.
  - Inductive, strong.
  - Inductive, weak.
  - Deductive, sound.
  - Deductive, invalid.
24. Given that  $x^2 + 2x = 15$ . It follows that  $x = 3$ .
- Inductive, strong.
  - Inductive, weak.
  - Deductive, valid.
  - Inductive, cogent.
  - Deductive, invalid.
25. Graffiti painted on that vacant building says "Boycott Meat." Therefore, it's clear that we should all become vegetarians.
- Deductive, sound.
  - Inductive, weak.
  - Deductive, invalid.
  - Deductive, valid.
  - Inductive, strong.
26. James Bloomfield, the widely respected expert on art authentication, says that the painting recently discovered in the basement of the art museum is a genuine Picasso. Therefore, we conclude that the painting is indeed a genuine Picasso.
- Deductive, invalid.
  - Inductive, weak.
  - Deductive, valid.
  - Inductive, cogent.
  - Inductive, strong.

27. Astrological calculations indicate that the U.S. stock market will crash in the year 2014. Therefore, you should get your money out of the market before that year.
- Inductive, cogent.
  - Deductive, valid.
  - Inductive, weak.
  - Deductive, invalid.
  - Inductive, strong.
28. If organic food contains pesticides, then consumers are misled. Organic food does not contain pesticides. Therefore, consumers are not misled.
- Inductive, weak.
  - Inductive, strong.
  - Deductive, valid.
  - Deductive, invalid.
  - Deductive, sound.
29. When Jack took his car in for service, the mechanic charged him for lots of work that didn't need to be done. The same thing happened to Niki and Claire. Apparently mechanics these days are just a bunch of crooks.
- Inductive, strong.
  - Inductive, weak.
  - Deductive, invalid.
  - Deductive, valid.
  - Deductive, sound.
30. All aerobic exercises are calorie burners and all calorie burners are weight reducers. Thus, all aerobic exercises are weight reducers.
- Deductive, valid.
  - Deductive, invalid.
  - Inductive, weak.
  - Inductive, strong.
  - Inductive, cogent.
31. After hearing Jordan's speech in the student council, Michael rolled his eyes and shook his head. Apparently Michael didn't agree with what Jordan said.
- Deductive, valid.
  - Deductive, sound.
  - Deductive, invalid.
  - Inductive, weak.
  - Inductive, strong.
32. Brandon is a polytheist. Therefore, he believes in more than one god.
- Inductive, cogent.
  - Deductive, invalid.
  - Inductive, weak.

- d. Deductive, valid.
  - e. Inductive, strong.
33. Given that figure  $A$  is a triangle, and one of its sides has a length of 1 foot. It follows that its area is less than 1 square foot.
- a. Inductive, weak.
  - b. Deductive, valid.
  - c. Deductive, invalid.
  - d. Deductive, sound.
  - e. Inductive, strong.
34. After buying a pair of Blue Atlas jeans, Carter was disappointed to find that they fell apart after only one month. The same thing happened to Jeff, Mario, and Ralph. Apparently Blue Atlas jeans don't hold up very well.
- a. Inductive, strong.
  - b. Inductive, cogent.
  - c. Deductive, invalid.
  - d. Inductive, weak.
  - e. Deductive, valid.