

Exercise Answers

Exercise 1.1

Part I

1. P: Titanium combines readily with oxygen, nitrogen, and hydrogen, all of which have an adverse effect on its mechanical properties.
C: Titanium must be processed in their absence.
2. P: The good, according to Plato, is that which furthers a person's real interests.
C: In any given case when the good is known, men will seek it.
3. P: The denial or perversion of justice by the sentences of courts, as well as in any other manner, is with reason classed among the just causes of war.
C: The federal judiciary ought to have cognizance of all causes in which the citizens of other countries are concerned.
4. P: When individuals voluntarily abandon property, they forfeit any expectation of privacy in it that they might have had.
C: A warrantless search and seizure of abandoned property is not unreasonable under the Fourth Amendment.
5. P₁: Artists and poets look at the world and seek relationships and order.
P₂: But they translate their ideas to canvas, or to marble, or into poetic images.
P₃: Scientists try to find relationships between different objects and events.
P₄: To express the order they find, they create hypotheses and theories.
C: The great scientific theories are easily compared to great art and great literature.
6. P₁: The animal species in Australia are very different from those on the mainland.
P₂: Asian placental mammals and Australian marsupial mammals have not been in contact in the last several million years.
C: There was never a land bridge between Australia and the mainland
7. P₁: Following the birth of a defective infant, not only is the mother denied the normal tension release from the stress of pregnancy, but both parents feel a crushing blow to their dignity, self-esteem, and self-confidence.
P₂: In a very short time, they feel grief for the loss of the normal expected child, anger at fate, numbness, disgust, waves of helplessness and disbelief.
C: The psychological impact and crisis created by birth of a defective infant is devastating.
8. P₁: The classroom teacher is crucial to the development and academic success of the average student.
P₂: Administrators simply are ancillary to this effort.
C: Classroom teachers ought to be paid at least the equivalent of administrators at all levels, including the superintendent.

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9. P₁: An agreement cannot bind unless both parties to the agreement know what they are doing and freely choose to do it.
C: The seller who intends to enter a contract with a customer has a duty to disclose exactly what the customer is buying and what the terms of the sale are.
10. P₁: Punishment, when speedy and specific, may suppress undesirable behavior.
P₂: Punishment cannot teach or encourage desirable alternatives.
C: It is crucial to use positive techniques to model and reinforce appropriate behavior that the person can use in place of the unacceptable response that has to be suppressed.
11. P₁: High profits are the signal that consumers want more of the output of the industry.
P₂: High profits provide the incentive for firms to to expand output and for more firms to enter the industry in the long run.
P₃: For a firm of above average efficiency, profits represent the reward for greater efficiency.
C: Profit serves a very crucial function in a free enterprise economy, such as our own.
12. P₁: My cat regularly used to close and lock the door to my neighbor's doghouse, trapping their sleeping Doberman inside.
P₂: Try telling a cat what to do, or putting a leash on him--he'll glare at you and say, "I don't think so. You should have gotten a dog."
C: Cats can think circles around dogs.
13. P₁: Private property helps people define themselves.
P₂: Private property frees people from mundane cares of daily subsistence.
P₃: Private property is finite.
C: No individual should accumulate so much property that others are prevented from accumulating the necessities of life.
14. P₁: To every existing thing God wills some good.
P₂: To love any thing is nothing else than to will good to that thing.
C: It is manifest that God loves everything that exists.
15. P₁: The average working man can support no more than two children.
P₂: The average working woman can take care of no more than two children in decent fashion.
C: Women of the working class, especially wage workers, should not have more than two children at most.
16. P₁: The nations of planet earth have acquired nuclear weapons with an explosive power equal to more than a million Hiroshima bombs.
P₂: Studies suggest that explosion of only half these weapons would produce enough soot, smoke, and dust to blanket the Earth, block out the sun, and bring on a nuclear winter that would threaten the survival of the human race.
C: Radioactive fallout isn't the only concern in the aftermath of nuclear explosions.

17. P₁: An ant releases a chemical when it dies, and its fellows carry it away to the compost heap.
 P₂: A healthy ant painted with the death chemical will be dragged to the funeral heap again and again.
 C: Apparently the communication is highly effective.
18. P: Every art and every inquiry, and similarly every action and pursuit, is thought to aim at some good.
 C: The good has been rightly declared to be that at which all things aim.
19. P₁: Antipoverty programs provide jobs for middle-class professionals in social work, penology and public health.
 P₂: Such workers' future advancement is tied to the continued growth of bureaucracies dependent on the existence of poverty.
 C: Poverty offers numerous benefits to the non-poor.
20. P₁: Corn is an annual crop.
 P₂: Butchers meat is a crop which requires four or five years to grow.
 P₃: An acre of land will produce a much smaller quantity of the one species of food (meat) than the other.
 C: The inferiority of the quantity (of meat) must be compensated by the superiority of the price.
21. P₁: Loan oft loses both itself and friend.
 P₂: Borrowing dulls the edge of husbandry.
 C: Neither a borrower nor lender be.
22. P₁: Take the nurse who alleges that physicians enrich themselves in her hospital through unnecessary surgery.
 P₂: Take the engineer who discloses safety defects in the braking systems of a fleet of new rapid-transit vehicles.
 P₃: Take the Defense Department official who alerts Congress to military graft and overspending.
 P₄: All know that they pose a threat to those whom they denounce and that their own careers may be at risk.
 C: The stakes in whistleblowing are high.
23. P₁: If a piece of information is not "job relevant," then the employer is not entitled qua employer to know it.
 P₂: Sexual practices, political beliefs, associational activities, etc., are not part of the description of most jobs
 P₃: They do not directly affect one's job performance.
 C: They are not legitimate information for an employer to know in the determination of the hiring of a job applicant.
24. P₁: One of the most noticeable effects of a dark tan is premature aging of the skin.
 P₂: The sun also contributes to certain types of cataracts, and, what is most worrisome, it plays a role in skin cancer.
 C: Too much sun can lead to health problems.

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25. P₁: It is generally accepted that by constantly swimming with its mouth open, the shark is simply avoiding suffocation.
P₂: This assures a continuous flow of oxygen-laden water into their mouths, over their gills, and out through the gill slits.
C: Contrary to the tales of some scuba divers, the toothsome, gaping grin on the mouth of an approaching shark is not necessarily anticipatory.
26. P: If you place a piece of Polaroid (for example, one lens of a pair of Polaroid sunglasses) in front of your eye and rotate it as you look at the sky on a clear day, you will notice a change in light intensity with the orientation of the Polaroid.
C: Light coming from the sky is partially polarized.
27. P₁: The secondary light [from the moon] does not inherently belong to the moon, and is not received from any star or from the sun.
P₂: In the whole universe there is no other body left but the earth.
C: The lunar body (or any other dark and sunless orb) is illuminated by the earth.
28. P₁: Anyone familiar with our prison system knows that there are some inmates who behave little better than brute beasts.
P₂: If the death penalty had been truly effective as a deterrent, such prisoners would long ago have vanished.
C: The very fact that these prisoners exist is a telling argument against the efficacy of capital punishment as a deterrent.
29. P₁: REM (rapid eye movement) sleep studies conducted on adults indicate that REM pressure increases with deprivation.
P₂: This would not occur if REM sleep and dreaming were unimportant.
C: REM sleep and dreaming are necessary in the adult.
30. P₁: World government means one central authority, a permanent standing world police force, and clearly defined conditions under which this force will go into action.
P₂: A balance of power system has many sovereign authorities, each controlling its own army, combining only when they feel like it to control aggression.
C: World government and the balance of power are in many ways opposites.

Part II.

1. College sports are as much driven by money as professional sports.
2. The creation of a multilingual society is contrary to the best interests of all of us.
3. The competitive aspect of team sports is having a negative impact on the health and fitness of our children.
4. Business majors are robbing themselves of the true purpose of collegiate academics, a sacrifice that outweighs the future salary checks.

Exercise 1.4

9. Disjunctive syllogism: a syllogism having a disjunctive statement for one of its premises
10. Prediction: An inductive argument that proceeds from our knowledge of the past to a claim about the future
11. Argument from authority: An inductive argument that concludes something is true because a presumed expert or witness has said that it is
12. Argument based on signs: An inductive argument that proceeds from the knowledge of a sign to a claim about the thing or situation that the sign symbolizes
13. Causal inference: An inductive argument that proceeds from knowledge of a cause to a claim about the effect, or from knowledge of an effect to a claim about the cause
14. Particular statement: A statement that makes a claim about one or more (but not all) members of a class
15. General statement: A statement that makes a claim about all the members of a class

Part III

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| 1. True | 6. False | 11. True |
| 2. True | 7. True | 12. False |
| 3. True | 8. False | 13. True |
| 4. True | 9. False | 14. False |
| 5. False | 10. False | 15. False |

Exercise 1.4

Part I

1. Valid, unsound; false premises, false conclusion.
2. Valid, sound; true premise, true conclusion.
3. Invalid, unsound; true premises, false conclusion.
4. Valid, sound; true premise, true conclusion.
5. Invalid, unsound; false premise, true conclusion.
6. Valid, unsound; one false premise, true conclusion.
7. Invalid, unsound; true premise, true conclusion.
8. Valid, unsound; one false premise, true conclusion.
9. Valid, sound; true premises, true conclusion.

10. Valid, unsound; one false premise, false conclusion.
11. Invalid, unsound; false premise, false conclusion.
12. Valid, sound; true premises, true conclusion.
13. Invalid, unsound; true premises, true conclusion.
14. Valid, unsound; one false premise, true conclusion.
15. Valid, sound; true premise, true conclusion.

Part II

1. Strong, cogent; true premise, probably true conclusion.
2. Weak, uncogent; true premise, probably false conclusion.
3. Strong, uncogent; false premise, probably false conclusion.
4. Weak, uncogent; true premise, probably false conclusion.
5. Strong, cogent; true premises, probably true conclusion.
6. Weak, uncogent; true premise, probably false conclusion.
7. Strong, uncogent; false premise, probably true conclusion.
8. Strong, cogent; true premises, probably true conclusion.
9. Weak, uncogent; true premise, undecided truth value of conclusion.
10. Strong, cogent; true premise, probably true conclusion.
11. Strong, uncogent; false premise, probably false conclusion.
12. Strong, uncogent; false premise, probably false conclusion.
13. Weak, uncogent; true premises, probably false conclusion.
14. Strong, cogent; true premise, probably true conclusion.
15. Strong, uncogent; false premise, probably false conclusion.