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. P_1: Artists and poets look at the world and seek relationships and order.
   P_2: But they translate their ideas to canvas, or to marble, or into poetic images.
   P_3: Scientists try to find relationships between different objects and events.
   P_4: 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. P_1: The animal species in Australia are very different from those on the mainland.
   P_2: 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. P_1: 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.
   P_2: 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. P_1: The classroom teacher is crucial to the development and academic success of the average student.
   P_2: 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.
Exercise 1.1

9. \( P_1 \): 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. \( P_1 \): Punishment, when speedy and specific, may suppress undesirable behavior.
\( P_2 \): 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. \( P_1 \): High profits are the signal that consumers want more of the output of the industry.
\( P_2 \): High profits provide the incentive for firms to expand output and for more firms to enter the industry in the long run.
\( P_3 \): 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. \( P_1 \): My cat regularly used to close and lock the door to my neighbor’s doghouse, trapping their sleeping Doberman inside.
\( P_2 \): 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. \( P_1 \): Private property helps people define themselves.
\( P_2 \): Private property frees people from mundane cares of daily subsistence.
\( P_3 \): Private property is finite.
\( C \): No individual should accumulate so much property that others are prevented from accumulating the necessities of life.

14. \( P_1 \): To every existing thing God wills some good.
\( P_2 \): 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. \( P_1 \): The average working man can support no more than two children.
\( P_2 \): 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. \( P_1 \): The nations of planet earth have acquired nuclear weapons with an explosive power equal to more than a million Hiroshima bombs.
\( P_2 \): 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.

    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.
Exercise 1.1

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

1. True 6. False 11. True
2. True 7. True 12. 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.