Exercise 4.4

Part I

1. No Non-B are A. True
2. Some non-B are non-A. Und.
3. No A are B. False
4. All non-B are A. False
5. Some B are not non-A. Und.
6. Some non-A are not B. True
7. Contraposition Und.
8. Obversion True
9. Conversion Und.
10. Obversion False
11. Contraposition True
12. Conversion False

Part II

1a. All potential causes of lung cancer are homes contaminated by radon gas. (Not logically equivalent)

b. No completely successful procedures are sex-change operations. (Logically equivalent)

c. Some works that celebrate the revolutionary spirit are murals by Diego Rivera. (Logically equivalent)

d. Some substances with a crystalline structure are not forms of carbon. (Not logically equivalent)

2a. No radically egalitarian societies are societies that preserve individual liberties. (Logically equivalent)

b. All cult leaders are people who brainwash their followers. (Logically equivalent)

c. Some college football coaches are not persons who slip money to their players. (Logically equivalent)

d. Some budgetary cutbacks are actions unfair to the poor. (Logically equivalent)

3a. All physicians eligible to practice are physicians whose licenses are intact. (Logically equivalent)

b. No compressible substances are non-gasses. (Not logically equivalent)
c. Some politicians who want to increase taxes are politicians who defend Social Security. (Not logically equivalent)

d. Some people who advocate integrated schools are not people who support mandatory bussing. (Logically equivalent)

Part III

1. Invalid (illicit conversion)
2. Valid
3. Valid
4. Invalid (illicit contraposition)
5. Valid
6. Valid
7. Valid
8. Invalid (illicit conversion)
9. Invalid (illicit contraposition)
10. Valid
11. Valid
12. Invalid (illicit contraposition)
13. Invalid (illicit conversion)
14. Valid
15. Invalid (illicit conversion)
16. Invalid (illicit contraposition)
17. Valid
18. Invalid (illicit conversion)
19. Valid
20. Valid

Exercise 4.5
Part I
1. (a) false, (b) true, (c) false
2. (a) undetermined, (b) undetermined, (c) true
3. (a) false, (b) false, (c) true
4. (a) undetermined, (b) true, (c) undetermined
5. (a) undetermined, (b) false, (c) undetermined
6. (a) false, (b) true, (c) true
7. (a) false, (b) undetermined, (c) undetermined
8. (a) true, (b) false, (c) true

Part II
1. Valid
2. Invalid (illicit subalternation)
3. Valid
4. Invalid (existential fallacy)
5. Invalid (illicit subcontrary)
6. Valid
7. Invalid (illicit contrary)
8. Valid
9. Invalid (existential fallacy)
10. Invalid (illicit subcontrary)
11. Valid

12. Invalid (unnamed fallacy)

13. Invalid (existential fallacy)

14. Invalid (illicit contrary)

15. Valid

Part III

1. All non-B are A. (True)

2. All A are non-B. (False)

3. All A are B. (True)

4. Some non-A are B. (Undetermined)

5. Some A are non-B. (True)

6. No non-B are non-A. (Undetermined)

7. No non-A are B. (False)

8. Some A are B. (False)

9. No non-B are A. (False)

10. Some non-A are not non-B. (True)

11. Contradictory (False)

12. Conversion (True)

13. Obversion (False)

14. Subalternation (Undetermined)

15. Conversion (Undetermined)

16. Contradictory (True)
17. Contraposition (True)
18. Subalternation (True)
19. Contrary Undetermined)
20. Subcontrary (True)

Part IV
1. Valid
2. Valid
3. Invalid (illicit subcontrary)
4. Invalid (illicit contraposition)
5. Valid
6. Invalid (existential fallacy)
7. Valid
8. Valid
9. Invalid (illicit conversion)
10. Invalid (illicit contrary)
11. Valid
12. Invalid (illicit contraposition)
13. Invalid (illicit subcontrary)
14. Valid
15. Valid

Part V
1. All I are C.
   Some I are C. (Subalt.)
   Some C are I. (Conv.)
2. No non-G are E. 
   Some non-G are not E. (Subalt.)
   Some non-E are not G. (Contrap.)

3. F: Some F are non-T. 
   F: Some F are not T. (Obv.)
   All F are T. (Contradic.)

4. All E are A. 
   F: No E are A. (Contrary)
   F: No A are E. (Conv.)
   F: All A are non-E. (Obv.)

5. No non-P are F. 
   No F are non-P. (Conv.)
   All F are P. (Obv.)
   F: Some F are not P. (Contradic.)

6. F: Some G are non-B. 
   F: Some G are not B. (Obv.)
   Some G are B. (Subcon.)
   Some B are G. (Conv.)

7. Some P are not non-S. 
   Some P are S. (Obv.)
   Some S are P. (Conv.)
   F: No S are P. (Contradic.)

8. F: No non-H are F. 
   F: No F are non-H. (Conv.)
   F: All F are H. (Obv.)
   Some F are not H. (Contradic.)

9. F: Some non-L are not S. 
   Some non-L are S. (Subcon.)
   Some S are non-L. (Conv.)
   Some S are not L. (Obv.)

10. F: Some F are not A. 
    F: No F are A. (Subalt.) 
    F: No A are F. (Conv.)
    F: All A are non-F. (Obv.)