Practice Midterm 2018

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1 Directions for part one of the practice exam: Entailments, contradictions, contradictories, presuppositions

In part one of the midterm (and the practice exam), each problem contains a pair of sentences. Let's call the first sentence S1 and the second S2. For each pair of sentences:

1.1. **First**, if S1 and S2 are **contraries** or **contradictories**, say so. Remember they might be neither. If you say they are contraries, but not contradictories, explain why. If you say they are contraries or contradictories, and provided any necessary explanation, you're done with this pair of sentences.

1.2. **Second**, if you're not done, say whether sentence S1 **entails** sentence S2 or is **logically equivalent** to the second, or **neither**. If you say neither (S1 does not entail S2 and is not equivalent to it), then you need to describe some circumstances in which S1 is true and S2 is false;

1.3. **Third,** if you said S1 entails S2, also say if S1 **presupposes** S2; if you claim S1 **presupposes** S2, you need to demonstrate that.

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Finally, discuss any **issues** that arose in formulating your answer. For example, (a) one or both of the sentences was ambiguous and you had to choose a reading, or (b) you had to make a specific assumption about the exact meaning of a word in S1 or S2.

As an example, consider the pair of sentences:

  (i.a) Fido is a mammal.
  (i.b) Fido is a dog

The following is a complete correct answer.

| Fido is a mammal $\not\Rightarrow$ Fido is a dog |

That is, (a) does not entail (b).

Suppose Fido is an elephant. Then we have:

	Sentence	Truth value
$(i.a)$	Fido is a mammal	true
$(i.b)$	Fido is a dog	false

Therefore, *Fido is a mammal* does not entail *Fido is a dog.*

This answer is correct because (i.a) does not entail (i.b). It is complete because you have **shown** that (1.a) does not entail (1.b) by describing a set of circumstances in which (.1a) is true and (i.b) is not true. It follows that (i.a) does not presuppose (i.b); nor are the two sentences contraries or contradictories. So we're done.

As another example, consider the pair of sentences:

  (ii.a) Jack is tall.
  (ii.b) Jack is short.

The following is a complete correct answer.

> The two sentences are contraries because both cannot be true. Jack cannot both be tall and short at the same time. They are not contradictories because it is possible for Jack to be of middling height, and thus be neither tall nor short.

This answer is complete because once you've identified the sentences as contraries or contradictories, you're done with the question.

As a third example, consider the pair of sentences:

(iii.a)   John rented an apartment to Mary.
(iii.b)   Mary rented an apartment from John.

The following is a complete correct answer.

John rented an apartment to Mary $\Longleftrightarrow$ Mary rented an apartment from John

That is, the two sentences are logically equivalent.

This answer is correct because (iii.a) entails (iii.b) and (iii.b) also entails (iii.a), making the two sentences logically equivalent. The answer is complete because (iii.a) does not presuppose (iii.b); nor are the two sentences contraries or contradictories. So we're done.

As a fourth example, consider the pair of sentences:

(iii.a)   John returned to the bank on Monday.
(iii.b)   John had been to the bank some time before Monday.

The following is a complete correct answer.

John returned to the bank on Monday $\Longrightarrow$
            John had been to the bank some time before Monday.

That is, sentence (a) entails (b); sentence (a) also presupposes (b), because:

John did not return to the bank on Monday $\Longrightarrow$
            John had been to the bank some time before Monday.

That is, the negation of (a) also entails (b).

This answer is correct because (iii.a) entails (iii.b) and the negation (iii.a) also entails (iii.b), making (b) a presupposition. The answer is complete because the two sentences are neither contraries nor contradictories. So we're done.

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2 Part one of the practice exam

2.1. (a) Fred is an intelligent politician.

   (b) Fred is intelligent.

2.2. (a) Susan is either a doctor or a lawyer.

   (b) Susan is a doctor.

2.3. (a) A Communist who writes mystery novels waits tables at the country club.

   (b) Reginald is a Communist who writes mystery novels and waits tables at the country club.

2.4. (a) Bibi is a doctor.

   (b) Bibi is either a doctor or a lawyer.

2.5. (a) Tanqueray is an expensive brand of gin.

   (b) Tanqueray is a brand of gin.

2.6. (a) The centerfielder is the shortstop's brother.

   (b) The shortstop is male.

2.7. (a) Reginald is a Communist who writes mystery novels and waits tables at the country club.

   (b) A Communist who writes mystery novels waits tables at the country club.

2.8. (a) Not every idiot is a politician

   (b) Some idiot is not a politician.

2.9. (a) Louisa stopped eating.

   (b) Louisa had started eating.

2.10. (a) The doctor cost Lee$_i$ his$_i$ job. (Consider only the reading on which *Lee* and *his* refer to the same person.)

   (b) Lee is male.

2.11. (a) No one gave candy to the Shi Tsu.

(b) Alice didn't give candy to the Shi Tsu.

2.12. (a) No sharks were harmed during the making of this film.

(b) No great white sharks were harmed during the making of this film.

2.13. (a) Every automatic weapon was confiscated.

(b) Every weapon was confiscated.

2.14. (a) Every weapon was confiscated.

(b) Every automatic weapon was confiscated.

2.15. (a) Ludwig quietly left the room.

(b) Ludwig left the room.

2.16. (a) Rita is Pat's sister.

(b) Pat is female.

2.17. (a) Not every politician is an idiot.

(b) There is a politician who is not an idiot.

2.18. (a) John's bicycle is broken.

(b) John has a bicycle.

2.19. (a) John's bicycle is broken.

(b) John's bicycle is not broken.

2.20. (a) Every Italian loves fairy tales.

(b) Every bald Italian loves fairy tales.

2.21. (a) Every Italian knows a song.

(b) Every Italian knows a German song.

2.22. (a) Every Italian knows a song.

(b) Not every Italian knows a song.

2.23. (a) Every Italian knows a song.

(b) Some Italian does not know a song.

2.24. (a) Germany won World War II.

     (b) Germany fought in World War II.

2.25. (a) It's cold.

     (b) It's hot.

2.26. (a) Someone is tall.

     (b) Someone is short.

3 Logic section of the practice exam

Consider the truth table for $\sim (\sim p \,\&\, \sim q)$:

p	q	$\sim p$	$\sim q$	$(\sim p \,\&\, \sim q)$	$\sim (\sim p \,\&\, \sim q)$
T	T	F	F	F	T
T	F	F	T	F	T
F	T	T	F	F	T
F	F	T	T	T	F

Answer the questions below about the following expressions.

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\begin{aligned}
(a) &\quad \sim (q \to p) \\
(b) &\quad \sim p \to q \\
(c) &\quad p \lor \sim q \\
(d) &\quad p \lor q \\
(e) &\quad \sim (p \lor q) \\
(f) &\quad p \to (q \to p) \\
(g) &\quad (p \to q) \to p \\
(h) &\quad \sim (p \to (q \to p))
\end{aligned}
$$

3.1. Which of the above expressions is logically equivalent to $\sim (\sim p \,\&\, \sim q)$? Prove your answer by showing truth tables for all of the above expressions.

3.2. Point out any of these expressions that are tautologies or contradictions and explain why using the truth tables.

4 Translation section of the practice exam

Translate the following sentences into predicate logic of the sort introduced in Allwood, Anderson, and Dahl, and further discussed in chapters 2 & 3 of Kearns. For any ambiguous sentences, give all the readings, and paraphrase them, saying which logical translation goes with which reading. Except where indicated otherwise, translate definite NPs and proper names using single letter constants. If you have an issue about how to translate a word, please **discuss** it and justify your decision, rather than just, say, ignoring the word and losing unnecessary points. If you feel that a word is being used inconsistently and you need to give it more than one translation (such as when you translate transitive and intransitive *eat* as EAT and EAT2), please explain why.

4.1. Rudolf studied neither syntax nor semantics. (You may translate both *syntax* and *semantics* as if they were proper names, but give them different translations, please).

4.2. Breanna and Letitia are enemies

4.3. Leland detests both John and Mary.

4.4. Roland adopted a friendly porpoise.

4.5. Roland is a friendly porpoise.

4.6. A successor was chosen.

4.7. Pete mailed every customer a box of chocolates. (Assume every customer got a different box; you may treat *chocolate* as if it were a proper name).

4.8. No problem was solved by every professor.

4.9. Jack resembles no one I know.(Translate *one* as if it meant the same as *person*)

4.10. The library is adjacent to the rec center. (Treat *the library* and *the rec center* as if they were proper names).

4.11. The library and the rec center are adjacent.

4.12. Canberra is in Australia.

4.13. Reggie is Susan's father.

4.14. John is fond of Mary.

4.15. Alex is a student of physics. (Treat *physics* as if it were a proper name).

4.16. Alex punched a student of physics.