1. deductive/inductive arguments

-see the 3 series of lectures from the Web

2.1 deductive arguments: **validity** & soundness (***not to be confused with the word to be used in our test – see a late note!***)

-Arguments where the conclusion is intended to be **valid**.

-A deductive argument is **sound** if and only if it is both valid, and all of its premises are actually true. Otherwise, a deductive argument is **unsound**. (***see another Word doc for details***)

2.2 inductive arguments: Arguments where the conclusion is intended to be strong

2.3 induction & induction in scientific reasoning: Induction in science is a type of induction where a generalized case is drawn from particular cases which are intended to be strong rather than valid.

Notes:

1. Inferences from correlations to causes, or predictions of future events based on past events are inductive reasoning

2. Scientific **theories** are generalizations from particular cases; therefore, they are opinions because they are not absolutely true - they might change as new evidence appears.

Moreover, “Disciplines that trade in valid arguments and valid inferences are fields like mathematics, computer science and formal deductive logic. The natural and social sciences, on the other hand, deal with fallible, risky inferences. They aim for strong arguments.”

3. Non-arguments: (***see another Word doc for details***)

The follows types of statements are **not** arguments:

-descriptions

-summaries

-explanations/elaboration

- introductions

-background information

-other extraneous materials.

For example, passage 1 has nothing but a statement at the beginning about how “animals” “are treated” in labs and an explanation of it in the rest of the passage. Passage 2, however, presents an argument with good reasons to support the claim made at the beginning.

*Passage 1*

The animals used in laboratory research are treated in a scandalously abusive fashion. In their pursuit of cures for human diseases, scientists do not seem to care how they treat their animal subjects. Considered inferior beings, animals can be tortured, starved, even killed, and no one cares. After all, the mistreatment is done in the name of medical progress for human beings. Because animals have no language to voice their pain, we ignore it and let their suffering continue.

*Passage 2*

The 1979 book Nim, written by the psychologist Herbert Terrace, should be required reading for all those people who are convinced that chimpanzees can use sign language to "talk." It should be required because it places in serious doubt the notion that animals can "talk" like human beings. After four years of teaching Nim, a baby male chimp named for the linguist Noarit-Chomsky, Terrace wrote an account of his experiments, and that account does not support popular claims for animal language. As Terrace points out in the book, Nim, by himself, seldom used any sign language at all. Instead, he confined himself to responding to his trainers. Fifty percent of the time his signs imitated part or all of his trainer's original signs. In addition, whenever he began to string together two or three words, he would become confused. He never developed the ability to construct sentences.

The difference between **explanations** and **arguments**: In the case of an explanation we take a single statement and look for reasons why it is true and, in the case of an argument, on the basis of one or several statements (the premises) we infer another statement (the conclusion).

4. facts vs opinions

A fact is a statement that can be proven by some reliable authority such as a proven scientific law, a governmental law, a history book, mathematics, measurements, observations, statistics, etc.

An opinion is often the view of an individual or group on a topic that is grounded in fact or completely unsupportable.

In informal situations it often comes from one's own personal feelings, current beliefs and values, or what one has been taught and one’s own past experience, rather than facts.

An opinion may be a fully presented argument in formal discussions such as those found in the “Opinion” column of newspapers and magzines.

5. Notes for the upcoming test：

**-Questions asked in test:**

**Part I Vocabulary (10Points)**

**Replace the underlined words with the words below. (10 points)**

a. ambivalent b. sanity c. provoke d. arrogant e. compelling

f. erode g. lethal h. immovable i. intrigue g. committed

1. If the headline is not fascinating, it will not capture readers’ attention.

2. It’s time to move on in a relationship if you decide to keep loyal to your partner for the rest of your life.

**PartII Critical Thinking Skills (70 points)**

**1. Read and decide which is the best answer. (6 小题. 6 points)**

1) China is a developing country.

A．fact B opinion C mixture

2) The waiters at that restaurant are rude, and the food costs twice as much as its worth.

A. Fact B. Opinion C mixture

……

**2. For the following paragraphs, choose "yes" if it is an argument, "no" if it is not. (5小题 10 points)**

1) Sheep are the dumbest animals. If the one in front walks off a cliff, all the rest will follow it. And if they get rolled over on their backs, they can't right themselves.

2) ……

**3. Identifying Inductive and deductive arguments (5 小题，3 道单选两道多选 12 points)**

**1) Which of the following statements are correct? (单选)**

A. For deductive arguments, if the premise is true, the thesis is very likely to be true.

B. Both reasoning by principle and reasoning by definition are deductive reasoning.

C. Inductive arguments are weak.

D. Deductive arguments help us learn unknown things.

**2) Which of the following are deductive arguments？(多选)**

A. All dogs are mammals. All mammals have kidneys. Therefore all dogs have kidneys.

B. Since all squares are rectangles, and all rectangles have four sides, all squares have four sides.

C. All science teachers are smart, since all my physics teachers, chemistry teachers and biology teachers are smart.

D. The sun is a star; the sun has planets; therefore some stars have planets.

**3) Which of the following are inductive arguments?** **(多选)**

**……**

**4）Which logic, inductive or deductive logic, is used …. in the following conversation？ \_\_\_\_\_\_\_\_\_\_\_\_\_**

**……**

**5）Which of the following arguments contain a thesis that is absolutely true?**

A. I took a tiny bite of the bread, and it is too salty. The whole loaf of bread must be salty.

B. When there is south wind, often there will be rain. Now we have the south wind, there will be rain.

C. Alexander will finish his book by tomorrow afternoon as long as he is an accomplished speed reader. Fortunately for him, he is quite accomplished at speed reading. Therefore, he will get his book finished by tomorrow.

D.I don’t like Lily. Others don’t like her either….

**4. For the following 7 arguments, please choose the best answer for each question. (42 points)**

For question 1: A. deductive. B. inductive

For question2: A. valid B. invalid

C. inductively forceful D. not inductively forceful

For question 3: A. sound B. unsound C. undecided

1) Dr. E is a philosophy professor. All philosophy professors are bald. So Dr. E is bald.

问题 1:\_\_\_\_\_\_\_\_\_ 问题 2：\_\_\_\_\_\_\_\_\_ 问题 3: \_\_\_\_\_\_\_\_\_

2) Maria's hair is naturally black. Today Maria's hair is red. So Maria dyed her hair.

问题 1：\_\_\_\_\_\_\_\_\_问题 2：\_\_\_\_\_\_\_\_\_ 问题 3:\_\_\_\_\_\_\_\_\_

- Clarification of the **terms used in** part 4 of PartII of **our test**: 【**Super important** **!!!!!!!!!!!!】**

* + Regarding question 2, **“Inductively forceful” ”not inductively forceful”** are equivalent to “strong arguments” and ”weak arguments”
  + Regarding question 3:

**“Sound”** refers to both **the truthfulness in actuality or in reality of the premises** and the **good logical** between the premises and the conclusion of an argument, whether it is **deductive or inductive.**

**Therefore, a sound argument may be a valid deductive argument or an inductively strong or forceful argument.**

“Unsound”, in contrast, refers to the **actual falsity in the real world of the premises** of an argument or the **bad logic** of an argument that leads to conclusion unbelieble.

**Therefore, an unsound argument may be a valid or invalid deductive argument, or an inductively weak argument.**

“Undecided” is expected to be chosen where you can’t tell if the premises are true or not in reality.