

**Critical Thinking**  
**Fall, 2015**  
**Exam 1**  
**10/25/2015**

**Name (Print):** \_\_\_\_\_

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- Enter all requested information on the top of this page.
  - You may use your textbook.
  - You may not use notes, handouts, etc.
  - Do not write in the table to the right.
  - Write clearly. Poor handwriting may lead to loss in points.
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Problem	Points	Score
1	30	
2	25	
3	25	
4	20	
Total:	100	

## Multiple Choice Questions

1. Circle the correct answer.
  - (a) (2 points) A group of statements in which some of them (the premises) are intended to support another of them (the conclusion) is known as a(n)
    - A. Chain argument
    - B. Claim
    - C. Argument
    - D. Reason
  - (b) (2 points) The statements (reasons) given in support of another statement are called
    - A. An argument
    - B. The conclusion
    - C. The premises
    - D. The complement
  - (c) (2 points) These two statements "The Wall Street Journal says that people should invest heavily in stocks. Therefore, investing in stocks is a smart move" constitute
    - A. No argument
    - B. An explanation
    - C. An argument
    - D. Two conclusions
  - (d) (2 points) A deductive argument is intended to provide
    - A. Probable support for its conclusion Incorrect
    - B. Persuasive support for its conclusion
    - C. Logically conclusive support for its conclusion
    - D. Tentative support for its conclusion
  - (e) (2 points) An inductive argument is intended to provide
    - A. Valid support for its conclusion
    - B. Probable support for its conclusion
    - C. Weak support for its conclusion

- D. Truth-preserving support for its conclusion
- (f) (2 points) A deductively valid argument cannot have
- A. True premises and a false conclusion
  - B. False premises and a false conclusion
  - C. False premises and a true conclusion
  - D. True premises and a true conclusion
- (g) (2 points) This classic argument “All men are mortal. Socrates is a man. Therefore, Socrates is mortal” is
- A. Inductively strong
  - B. Deductively cogent
  - C. Deductively invalid
  - D. Deductively valid
- (h) (2 points) “If the Yankees win, they will be in the World Series” is a
- A. Negation
  - B. Disjunction
  - C. Conditional
  - D. Conjunction
- (i) (2 points) Modus ponens has this argument pattern
- A. If p, then q. q. Therefore, p.
  - B. If p, then q. If q, then r. Therefore, if p, then r.
  - C. Either p or q. Not p. Therefore, q.
  - D. If p, then q. p. Therefore, q.
- (j) (2 points) The invalid argument form known as denying the antecedent has this pattern:
- A. If p, then q. p. Therefore, q.
  - B. If p, then q. q. Therefore, p.
  - C. If p, then q. Not p. Therefore, not q.
  - D. If p, then q. If q, then r. Therefore, if p, then r.
- (k) (2 points) An argument with this form, “If p, then q. If q, then r. Therefore, if p, then r” is known as
- A. Modus tollens
  - B. Hypothetical syllogism
  - C. Modus ponens
  - D. Disjunctive syllogism
- (l) (2 points) An argument with this form, “Either p or q. Not p. Therefore, q” is known as
- A. Disjunctive syllogism
  - B. Hypothetical syllogism
  - C. Modus tollens
  - D. Dual syllogism
- (m) (2 points) This argument, “If Buffalo is the capital of New York, then Buffalo is in the state of New York. Buffalo is in the state of New York. Therefore, Buffalo is the capital of New York”, is an example of
- A. Denying the antecedent
  - B. Disjunctive syllogism
  - C. Affirming the antecedent
  - D. Affirming the consequent
- (n) (2 points) It is not reasonable to believe a claim when

- A. It is criticized
  - B. Most people reject it
  - C. There is no good reason for doing so
  - D. There is no good reason for examining it
- (o) (2 points) The truth-table test of validity is based on the fact that it is impossible for a valid argument to have true premises and
- A. A true conclusion
  - B. A negated conclusion
  - C. A conditional
  - D. A false conclusion

## Translations

2. For each of the following arguments, translate it into symbols. Use the standard symbols for the logical connectives and use letters for the claims.
- (a) (5 points) If there is no rain soon, the crops will die. If the crops die, there will be no food for the coming winter. The crops will not die. Therefore, there will be rain soon.
  - (b) (5 points) If we give kidnappers the money that they demand, then further kidnappings will be encouraged. If we do not give kidnappers the money that they demand, the kidnappers will kill the hostages. We will not give kidnappers the money that they demand. Therefore, the kidnappers will kill the hostages.
  - (c) (5 points) Either Emilio walks or he takes the train. And either Joann takes the train or she does not take the train. If Emilio walks, then Joann takes the train. Emilio takes the train. So Joann will not take the train.
  - (d) (5 points) Either the herbal remedy alleviated the symptoms, or the placebo effect alleviated the symptoms. If the placebo effect is responsible for easing the symptoms, then the herbal remedy is worthless. The herbal remedy alleviated the symptoms. So the herbal remedy is not worthless.
  - (e) (5 points) If then things are either the result of coincidence or for an end, and these cannot be the result of coincidence, it follows that they must be for an end.

## Truth-Tables

3. For each of the following arguments, do the following:
- 1. Compose a truth table. (4 points)
  - 2. State whether the argument is valid or invalid. (1 point)
- (a) (5 points)
    - P1.  $(p \vee q) \rightarrow (p \& q)$
    - P2.  $p \& q$
    - C.  $p \vee q$
  - (b) (5 points)
    - P1.  $a \vee (b \& c)$
    - P2.  $\neg(b \& c)$
    - C.  $a$
  - (c) (5 points)
    - P1.  $a \vee (b \rightarrow c)$
    - P2.  $b \& \neg c$
    - C.  $\neg c$

- (d) (5 points)
- P1.  $d \vee \neg e$
  - P2.  $f \rightarrow e$
  - C.  $d \rightarrow \neg f$
- (e) (5 points)
- P1.  $d \rightarrow e$
  - P2.  $e \vee f$
  - P3.  $e$
  - C.  $d \& f$

## Integrative Exercises

4. For each of the following arguments, do following:
1. Identify the conclusion. (1 point)
  2. Identify the premises. (1 point)
  3. Translate the premises (2 points) and conclusion into symbols (1 point).
  4. Construct a truth-table for the argument. (4 points)
  5. State whether the argument is valid or invalid? (1 point)
- (a) (10 points) If the allies accidentally damage any holy sites when they attack enemy forces, the local people will never give the allies any respect. The allies, though, will not damage any holy sites. Therefore, the locals will respect the allies.
- (b) (10 points) People do not have free will. For, if they did, they could be held morally responsible for what they do. But—as our judicial system demonstrates—people cannot really be held morally responsible for their actions.