

# CS 4002

## Robots and Society

### Midterm, Spring 2007

The exam is closed book and closed notes. There are three questions for 100 points. You are provided a blue book. You should use no more than the first four pages (*i.e.*, eight sides) of each blue book to answer *\*each\** question.

**Any text beyond those four pages for any given question will be ignored** so you may use the extra sheets in the back of each blue book for any notes you need. Return the book and this question sheet, putting your name on each. If you fail to return the book or the sheet you will receive no credit for this exam. You have roughly an hour and twenty minutes. Write clearly, crisply and concisely as well as legibly. Use your time wisely, and do try to relax.

#### QUESTION 1

Unfortunately one of your friends is going to have to undergo open heart surgery. At a nearby hospital, they have just installed the latest in Robot Surgery, but it is undergoing clinical trials only. Your friend is a candidate patient for this new technology.

- A). State whether you are pro or con regarding his enrolling in this clinical study.
- B). State and provide one argument from *\*each\** of the following perspectives to justify your pro or con position, and then explain why it fits that style of argumentation. Make it very clear why it fits that category, by first defining one that style of argumentation is and then how your position fits that category.
- 1) Provide a Logos-based justification for your position.  
Why is this position logos-based?
  - 2) Provide a Pathos-based justification for your position.  
Why is this position pathos-based?
  - C) Provide an Ethos-based justification for your position.  
Why is this position ethos-based?
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## QUESTION 2

As you are well aware, the U.S. is moving full-speed ahead with a planned marked increase in unmanned vehicle (robotic technology) to be deployed over the next ten years in the battlefield.

A). Perform a stakeholder analysis, identifying the differing courses of action one might take in this situation. What might be the positive outcomes of such a situation (i.e., a very large number of unmanned systems involved in fighting wars) on humanity (*e.g.* from an individual, national, or global perspective)? Similarly, what might be the negative consequences? Explain at least three of the values you assigned. Clearly identify the overall specific course of action your analysis suggests.

B). Now using a non-utilitarian deontological framework, develop an ethical doctrine that comes to the same conclusion as your stakeholder analysis. If you find that you cannot come to the same conclusion please explain why not, and briefly explain which end result you prefer. You may choose one of the following frameworks:

- Social Contract Theory
- Kant's Categorical Imperative

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## QUESTION 3

In the near future, a new study in Human-Robot interaction has just indicated that a significant percentage of people (2%) have the potential to develop an unhealthy addiction to entertainment robots, which actively causes them to seek out robot stimulation at the expense of human-human interaction. This leads to an atrophy of their social skills that further compounds their per-existing inability to relate effectively to family and friends. In essence it is a new form of robot-induced autism.

A). What policy would you advocate that should be created to deal with this new social problem? Briefly, what is your justification for this policy?

B) For each of Lessig's four forces (listed below), explain the basis and consequences of each force on the shaping and implementation of your policy stated above that will affect the future of entertainment robotics.

- 1) Legislative
- 2) Economic
- 3) Social
- 4) Technological