Test ethics and technology for aerospace engineering (WM0324LR)
Monday 19 December 2005, 9.00-10.00

This test consists of two parts. For each part, you can earn 5 points. Success!
The grades for the test will be published on Blackboard.

Name:
Student number:

Part 1
For each of the following statements indicate whether they are true (In Dutch: Juist) or false (In Dutch: Onjuist). If you do not know the answer, please make a guess. In the grading of the test, a correction is made for guessing. Do not forget to indicate the version of the test you made (A, B, C or D).

VERSION A

1. The classical view of the responsibility of engineers holds that they have to execute their assignments, and fulfill the demands of their company and of its customers, as well as possible within the limits of existing law. (T)

2. The members of a profession make use of particular knowledge which is not generally available and which is not understandable by laypersons. (T)

3. Whistleblowing always involves informing a judge about a wrong situation in the company where one works. (F)

4. To conclude from the undesirability of something that it will therefore not happen is called the naturalistic fallacy. (F)

5. The conclusion of an inductive argument is logically contained in the premises. (F)

6. In the case of a valid argument it is impossible that all the premises are true, and the conclusion false. (T)

7. According to the reader, ethical relativism makes it impossible to criticize someone else's moral views and behavior. (T)

8. To reject ethical relativism is to be committed to ones moral views being the only right ones. (F)

9. Utilitarianism is a form of deontology. (F)

10. Claim rights always imply that some other people have specific duties. (T)

11. The statement "The moon is made of cheese" is normative. (F)

12. Dutch regulation of risks is based on the premise that the acceptability of risks is linear to their magnitude expressed in terms of probability of an undesirable event times the number of fatalities in the case of such an undesirable event. (F)

13. The precautionary principle implies that the government has to be cautious in issuing measures against technological risks in order not to slow down economic growth. (F)

14. The principle that the technical experts (i.e. those who are technically informed) are to decide about the ethical acceptability of risks is known as the principle of 'informed consent'. (F)

15. Collective accountability implies that all members of an organization are each personally accountable for the activities of the organization. (T)

16. Actions of organizations can have effects that have not been intended by any of the individuals who are part of the organization. (T)

17. A company code of conduct is a set of restrictions upon the activities of a company which are imposed by the company. (T)

18. Limited liability of corporations means that only the managers of a corporation can be held liable for the activities of the corporation. (F)

19. The principle of fault liability holds that a person is liable for his/her activities irrespective of whether he/she is at fault. (F)

20. The following argument is valid:
    All cats are dogs
    Sarah is a cat
    So Sarah is a dog (T)

Part 2

You can answer the following questions in English or Dutch, as you wish. Argue your answers. Your arguments will play an important role in the grading.

1)

James is an engineer working for the company AERO that produces aero-engines. The company is developing a new type of aero-engine called the FANX. James is responsible for the testing of the FANX. He is in the middle of conducting a range of crucial tests for the reliability of the new aero-engine. Yesterday, Bill – who is James' boss - has asked James to finish his test reports within a week because an important potential customer will visit AERO next week and wants to have a look at the first test reports. James first reaction is to refuse Bill's request: he is not able to finish the test report within a week; he first needs to do more tests. James considers these additional tests crucial for gaining good insight in the reliability of the FANX. Bill tells James to abandon the planned other tests and to start writing his report immediately. Later, there will be more time to do the other tests. Bill also tells James that if James refuses he will ask Eric to write the report. James says that he really needs more time. Moreover, he objects, Eric is not knowledgeable of the tests and will not be able to write a sound report. After the meeting, James contacts Eric who says that he agrees with Bill and that he will write the report if Bill asks him to do so.

a) Suppose that James the next day decides to follow Bill's order and to finish the report immediately abandoning the other tests. Can this choice of James be justified in utilitarian terms? Explain why or why not.

   YES:
   - *Criterion is greatest good for greatest number*
   - *Better consequences because more sound report than in case Eric accepts assignment*
   - *Therefore all parties are better of: customer (has report and report is more sound than as Eric does it), Bill (according to his request), Eric (does not have to a write report for which he is not qualified), James (better report, better for his position in company), public (less chance of accident due to incomplete or unsound report)*
   - *James can indicate in report that it is preliminary and that more tests have to be done*

   BUT:
   - *Are consequences indeed better?*
   - *Are there other options than either writing report or letting Eric do it? (e.g. whistle blowing)?*

b) What should James do if he would try to apply Kant's categorical imperative to this situation

Refuse.
Action cannot be universalized. Maxim: write incomplete test report if your boss asks you to do so. If every test engineer would give in in situations like this; tests reports will not be trusted anymore and testing would become superfluous. You cannot want this because it denies the maxim that underlies your action because tests reports become useless.

Also: lying/misinforming the potential customer; cannot be made universal according to Kant.

Other answers are possible.

c1) What virtues are relevant for an engineer doing test (like James)? (Mention at least four)

- *Precision, exactness, carefullness*
- *Professionalism/expertise*
- *Objectivity*
- *Integrity*
- *Firmness, courage*
- *(loyality?)*

Other virtues might be mentioned, but the virtues should be clearly relevant for a testing engineer.

c2) What action is supported by these virtues?

Not giving in; also not accepting hat Eric' takes over assignment. Note: an action should be indicated and it should be argued how it fits with the virtues (compared to other actions)

d) Which moral framework (theory) is in your mind best able to deal with this moral problem. Argue why?

Score depends on arguments. You should argue not only within a framework but also from the view of choosing between the frameworks. E.g. not only that there are good consequences but also why consequentialism is a better approach than deontology.