Exam WM0324LR
Ethics and engineering for aerospace engineering
January 29, 2015 – WITH ANSWERS

This exam consists of 30 multiple choice questions. Each question only has one right answer. In some questions, you are asked to indicate which statement(s) is/are true. If two or more statements are true, choose the answer that indicates this. If you do not know the answer, you may make a guess. In the grading of the test, a correction is made for guessing, so it is beneficial for you to always answer the question! You may use a **dictionary**. Good luck!

1. Depending on the goals of a code of conduct, three types of codes of conduct can be distinguished. Which is NOT such a type?

a) An aspirational code.
b) An advisory code.
c) A disciplinary code.
d) An obligatory code.

2. Professional codes typically prescribe the behavior of engineers regarding:

a) Integrity and honesty.
b) Responsibility towards the public.
c) Both a) and b).
d) None of the above.

3. In a laboratory a mishandling of some equipment by a researcher caused a fire that destroyed the lab. The equipment was very old, something that significantly increased the chance that a small mistake in handling could lead to dire consequences. Which of the following is true regarding the responsibility for the disaster?

a) Only the engineer handling the equipment can be blamed.
b) If all the actions were according to the laws and the regulations of the laboratory then no wrong-doing took place.
c) If the equipment was not visibly faulty nobody can be blamed.
d) **None of the above.**

4. I: An inductive argument and a deductive argument can have the same premises.
II: An inductive argument and a deductive argument can have the same conclusion.

a) I is correct.
b) II is correct.
c) I and II are correct.
d) I and II are incorrect.

5. I An argument can be invalid while the conclusion is true.
II. An argument can be valid while the conclusion is false.

a) I is correct.
b) II is correct.
c) I and II are correct.
d) I and II are incorrect.

6. Consider the following argument.
- If Pete's shoes are on the mat, then he is at home.
- Pete is at home.
- Therefore, Pete's shoes are on the mat.
This is:

a) A correct deductive argument.
b) An incorrect deductive argument.
c) A correct inductive argument.
d) An incorrect inductive argument.

7. Which of the following is not an ideal that drives active responsibility in engineers?

a) Effectiveness.
b) **Technocracy.**
c) Human welfare.
d) Efficiency.

8. *"Engineers should decide what is best for a company or for a society*" Which of the following models is best described by this quote?

a) Technocracy.
b) Separatism.
c) Tripartite Model.
d) Whistle-blowing.

9. Which one of the following statements is *false* about stakeholders?

a) Stakeholders are a specific group of actors.
b) Stakeholders have an interest in the development of a technology.
c) **Stakeholders are always able to steer the direction of technological development.**
d) None of the above.

10. Review the follow three statements:
"The Ford Pinto satisfied the USA government's safety standards of that time."
"The Ford Pinto should have been recalled as soon as safety risks were identified."
"A cost-benefit analysis was the right way to decide if recalling the Ford Pinto was a responsible course of action."
Which of the above statements can be understood as a normative (and not descriptive) judgment about the Ford Pinto case study?

a) Both 1 and 2.
b) Both 2 and 3.
c) Both 1 and 3.
d) All of the above.

11. What problems arise with Normative Relativism when examined as an ethical position?

a) It makes meaningful moral discussion impossible.
b) It implies a contradiction regarding universal norms.
c) It can create an unworkable or intolerable situation.
d) All of the above.

12. Examples of moral values are:

a) Freedom
b) Autonomy
c) Equality
d) All of the above.

13. Never treat other people as a mere instrument to one's own goals is a principle from:

a) Consequentialism.
b) Kantian ethics.
c) Virtue ethics.
d) Care ethics.

14. Utilitarianism is a subclass of:

a) Consequentialism.
b) Kantian ethics
c) Virtue ethics.
d) Care ethics.

15. What a moral duty prescribes can be derived from:

a) Consequentialism.
b) Utilitarianism.
c) Kantian ethics.
d) All of the above.

16. A parent or teacher aims to behave in an exemplary way, as a role model, for his child or pupil. This corresponds most closely with:

a) Utilitarianism.
b) Kantian ethics.
c) J.S. Mill's ethics.
d) Virtue ethics.

17. Means-end argumentation is central to utilitarianism.
Deriving a contradiction is central to Kantian ethics.

a) I is correct.
b) II is correct.
c) I and II are correct.
d) I and II are incorrect.

18. The *Straw person fallacy* is committed when one:

a) Formulates one's opponent's view in an incorrect way so one can more easily attack it.
b) Discredits an argument by highlighting something negative about the person who advances the argument.
c) Splits up arguments in parts or bundles that are too small.
d) Intimidates possible critics by declaring immovability on beforehand.

19. One commits the *Naturalistic fallacy* when one:

a) Says that normative ideas are obviously subjective.
b) Claims for example that human beings are animals.
c) Presents one's conclusion in a too naked form where more explanation is required.
d) None of the above.

20. Computer models are important tools for simulation during the design process. However, such models might not be entirely reliable, because:

a) Basic assumptions in drawing up the computer model are just wrong.
b) Users of these models are not aware of the proper domain of application for the model.
c) The normative values inherent in the model are not explicated clearly.
d) Both a and b.

21. Values trump each other when:

a) One value is regarded as significantly more important than the other one by (almost) everyone.
b) The two different values select at least two different options as best.
c) The largest possible increase in the fulfillment of one value is not sufficient to justify a decrease in the fulfilment of another value.
d) Thresholds are applicable.

22. In cost-benefit analysis, we sometimes apply contingent validation. This is:

a) The use of discounting while realizing that the choice of discount rate is essentially arbitrary. Any validation of outcomes of the analysis is thus contingent upon this important choice.
b) A way of expressing non-economic values in monetary terms by finding out how much people would be willing to pay to attain a certain level of these values. As such, the value of non-economic entities is contingent upon people's willingness-to-pay.
c) The assignment of conditional qualifiers to input values into the cost-benefit analysis. As such, the analysis is robust, since it can adjust to contingencies in the real world and thus the validation of costs and benefits.
d) None of the above.

23. One fundamental issue with cost-benefit analysis is that:

a) It treats all values as intrinsic.
b) It treats almost all values as intrinsic.
c) It treats no values as instrumental.
d) It treats almost all values as instrumental.

24. In which of the stages of the design process (six in total) are the design requirements formulated?

a) Decision stage.
b) Problem analysis and formulation stage.
c) Formulation of design requirements stage.
d) Conceptual design stage.

25. Which of these methods for making value tradeoffs in design do(es) not generally treat(s) values as commensurable?

a) Cost-benefit analysis.
b) Thresholds.
c) Multiple criteria analysis.
d) Both a and c.

26. Ways to increase the safety of products are:

a) Adding a safety factor.
b) Build in a positive feedback mechanism.
c) Both a) and b).
d) None of the above.

27. One step in risk assessment typically consists of release assessment. Other steps are:

a) Exposure assessment.
b) Consequence assessment.
c) Both a) and b).
d) None of the above.

28. Informed consent:

a) Can sometimes occur through the market.
b) Can never occur through the market.
c) Is irrelevant when there is a market.
d) Is only possible in price elastic markets.

29. Which of the following is NOT a desideratum for allocating responsibility for safety?

a) The allocation of responsibility should be clear so that outsiders know whom to address for specific safety concerns.
b) Responsibilities should be allocated so that no two individuals can share the same responsibility.
c) The allocation of responsibility should be effective in the sense of resulting in a safe product.
d) Any individual or group to which responsibility is allocated should be able to live up to such responsibility.

30. Why is the distribution of responsibility important to consider in technological design?

a) Because technology should be designed in such a way that responsibilities are evenly distributed.
b) Because technology should timely provide the necessary information to live up to responsibilities.
c) Because design decisions affect passive responsibilities in case of mistakes.
d) Both b and c.