USE basis test answers

A crew of awesome people

June 30, 2017

Test 1

Rick

Question 1: The Tu/e website of the Science and Technology of Nuclear Fusion group features the following quote: "Fusion may have a wonderful image as a sustainable energy source - it is clean, zero CO2, safe and the fuel is abundant, for all and for ever - it has one big drawback: building a fusion reactor is of surpassing scientific and technological difficulty. A challenge for the engineer!". To which USE aspect does this quote refer ? Select one:

A. Users

B. Society

C. Enterprise

Correct answer: Society

Question 2: In the Age of Promise, Thomas Edison invented the kinetoscope, an early motion-picture camera. He saw firms as the prime user. In this case, firms were:

A. Projected Users

B. End Users

C. User-tinkerers

D. Real Users

Correct answer: Projected Users

Question 3: Today, user communities make huge contributions to the development of apps and games. From an innovation perspective, this type of user activity corresponds most closely to:

A. The role of users in urban planning in the Age of Promise

B. The role of users in developing the telephone in the Age of Promise

C. The role of users in developing wind turbines in the Age of Promise

D. The role of users in developing worker-friendly textile industries in the Age of Promise

Correct answer: The role of users in developing wind turbines in the Age of promise

Question 4: Which social-political agenda was inscribed in the urban planning of Paris by Haussmann ?

A. Avoiding environmental destruction

B. Making streets safer for people

C. Avoiding formation of radical groups

D. Making Paris better accessible for cars

Correct answer: Avoiding formation of radical groups

Question 5: The discipline of civil engineering was established in the Age of Promise. Before that

A. There had not been any engineers

B. There had only been research engineers

C. There had only been military engineers
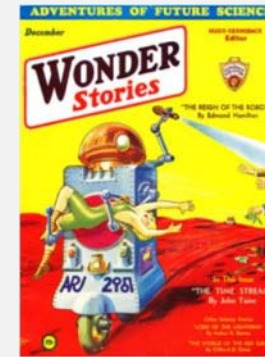
D. There had only been industrial engineers

Correct answer: There had only been military engineers

Question 6: In the Age of Crisis, national professional organizations of chemical scientists and engineers (such as the American Chemical Society) worked on chemical warfare for their country's defense. How did the American Chemical Society see chemical weapons ? Select one:

A. As a user promise

B. As a user nightmare

C. As a society promise

D. As a society nightmare

E. As an engineer promise

F. As an engineer nightmare

Correct answer: As a society promise

Question 7: In the picture you see the cover of the book "Reign of the Robots" by Edmund Hamilton, published in 1931. These new science fiction novels exemplified specific ideas that developed at the time. Of which ideas were these novels an example ? Select one:

A. A developing fear of enslavement to modern technologies

B. An envisioned future of daily life in wealth and prosperity

C. A growing pride in technological development and societal progress

D. An increasing worry about computer experts taking over

Correct answer: A developing fear of enslavement to modern technologies

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Question 8: Which innovation embodied the positive nature of technology in the Age of Promise, but turned into a nightmare in the Age of Crisis ? Select one:

A. Railroads: they were an important part of the infrastructure state in the Age of Promise, but turned into an essential technology of war logistics during World War I.

B. The assembly line: the innovation fit well with the ideas of worker exploitation characterizing the Age of Promise, but boosted the production efficiency process in the Age of Crisis.

C. Sewage systems: these increased health conditions during the Age of Promise, but this resulted in overpopulated cities during the Age of Crisis.

D. Synthetic chemistry: the chemical use in efficient military weapons created more human warfare in the Age of Promise, while its use in artificial fertilizers caused environmental problems during the Age of Crisis.

Correct answer: Railroads

Question 9: The Age of Crisis marked the rise of communist and fascist dictatorships. It was also in this period that the technocracy movement was founded. According to the book: Engineering the Future, Understanding the Past, how were the 1930s characterized ? Select one:

A. Technocracy was to counter the threat of politicians, financiers and dishonest business men.

B. The ideal of technocracy did NOT yet exist.

C. Technocracy and engineering are value-free and do NOT support or counter dictatorships.

D. Technocracy was a characteristic of democratic, Nazi, fascist, communist systems.

Correct answer: Technocracy was to counter the threat of politicians, financiers and dishonest business men.

Question 10: In the reader Engineering the Future, Understanding the Past, the history of technology is set in four distinct periods. Which description fits the Age of Crisis ? Select one:

A. A period of great poverty, numerous diseases and low life expectancy.

B. A period of two World Wars and the great economic depression

C. A period of Cold War nuclear threats and environmental pollution

D. A period of climate change, financial, and refugee crises.

Correct answer: A period of two World Wars and the great economic depression

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Question 11: The use of pesticides in agriculture contributed to the decrease of hunger and malnutrition, one of the main social problems in the Age of Promise. In the 1950 and the 1960 this use of pesticides was increasingly criticized. The possible detrimental health effects were stressed. How does the book Engineering the Future, Understanding the Past, interpret the occurrence of health effects ? Select one:

A. As an engineering problem

B. As a misuse of technology

C. As one of the twenty-first century Grand Challenges

D. As an unintended consequence

Correct answer: As an unintended consequence

Question 12: In the Age of Promise, Gerard and Frederik Philips set up the Philips company (1891). They identified electric lightning as a promising technology and worked hard to develop a mass production process. According to the book Engineering the Future, Understanding the Past, Gerard and Frederik Philips were typical examples of:

A. Inventors

B. Opportunity-seeking entrepreneurs

C. Inventor-entrepreneurs

Correct answer: Opportunity-seeking entrepreneurs

Question 13: In the 1939 World's Fair exposition Futurama, General Motors displayed its mobility dream. Which of the following groups was addressed as the user of this futuristic mobility system ? Select one:

A. Suburban middle class user-consumers

B. Inner city upper class user-consumers

C. Professional users of the transportation sector

D. Professional users of the public transport sector

Correct answer: Suburban middle class user-consumers

Question 14: In the Age of Promise, users influenced innovation in several ways. For instance, "user-consumers" can influence technological innovation by:

A. Using products in different ways than designers intended

B. Demanding fair conditions for workers

C. Buying products and changing the design

D. Being "projected users"

Correct answer: Using products in different ways than designers intended

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Question 15: Before safety standards became normal, many accidents accompanied the introduction of new consumer technologies like electricity and automobiles. In these early days, who were mostly blamed for these accidents ? Select one:

A. Governments

B. Users

C. Engineers

D. Enterprises

Correct answer: Users

Question 16: Enzo Knol is a well known Dutch videoblogger or Vlogger. In his Vlogs he shares his personal life in video clips he uploads to YouTube. In terms of the book Engineering the Future, Understanding the Past, Enzo Knol is a:

A. Projected user

B. User consumer

C. User inventor

D. User tinkerer

Correct answer: User tinkerer

Question 17: What was the aim of the World Exhibitions in the late 19th century ?

A. Providing a forum for globalization activist

B. Providing a forum of business people to meet

C. Presenting innovative technologies

D. Presenting food from around the world

Correct answer: Presenting innovative technologies

Question 18: Vodafone's slogan is "Power to you". Dutch newspapers, however, recently debated how modern men and women - especially the Internet Generation - are turning into slaves of their cell phones. How would the book Engineering the Future, Understanding the Past, interpret people's addictions to cell phones today ? Select one:

A. A misuse of technology

B. An unintended consequence

C. A twenty-first century Grand Challenge

D. An engineering problem

Correct answer: An unintended consequence

Question 19: Under the rule of totalitarian regimes, the position of scientists and engineers became more difficult. Which statement best describes this position? Select one:

A. Scientists and engineers in most cases actively sided with the totalitarian regimes

B. Scientists and engineers were generally seen as threats and were prohibited from working

C. Scientists and engineers struck compromises between working for the regime and surviving

D. Scientists and engineers could continue working in a non-political way

Correct answer: Scientists and engineers struck compromises between working for the regime and surviving

Test 2

Gerben

Question 1: Today leading engineers worldwide are debating Engineering's Grand Challenges for the near future. What is the main aim of the debate ? Select one:

A. To protect engineering sciences from outside pressure by managers and politicians

B. To encourage engineering sciences to find matching funds from social partners

C. To promote the professionalization of engineering sciences

D. To solve society's problems through science and engineering breakthroughs

Correct answer: To solve society's problems through science and engineering breakthroughs

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Question 2: Christian party SGP want to ban adultery commercials from dating sites like Second Love from public broadcasters in the Netherlands. According to party leader Kees van der Staaij these "repulsive" ad campaigns that call on spouses to commit adultery destroy many relationships and families. "Every divorce we can avoid is pure profit for the children involved", he said to broadcaster NOS. He pointed out that there are all sorts of restrictions on ads for smoking and alcohol and that even ads for loans contain warnings. Christian party SGP is currently part of the political opposition.
According to the book Engineering the Future, Understanding the Past, how should we define Christian party SGP in this case ?

A. As a society actor defining happiness for all, from their Christian values

B. As a group of real users that shape technology to their own preference

C. As a society actor using technocratic means to ban commercial dating sites

D. As an user-activists, that mis-use dating sites to promote their Christian values

Correct answer: As a society actor defining happiness for all, from their Christian values

Question 3: Here you see an add of the Honeywell 316 Kitchen Computer, a 16-bit minicomputer built by the first Honeywell in 1969.

The text of the add reads: "If she can only cook as well as Honeywell can compute. Her souffles are supreme, her meal planning a challenge? She's what the Honeywell people had in mind when they devised our Kitchen Computer. She'll learn to program it with a cross-reference to her favorite recipes by N-M's own Helen Corbitt. Then by simply pushing a few buttons obtain a complete menu organized around the entree. And if she pales at reckoning her lunch tabs, she can program it to balance the family checkbook.(..)".

The kitchen computer came with a two week programming course. The kitchen computer is a typical product of the age of technocracy. Which technocratic feature is recognizable in this add? Select one:

A. Honeywell experts think housewives share the same expertise as they do, and expect them to program

B. Recipes of Helen Corbitt are embedded in the Honeywell kitchen computer

C. Honeywell experts have thought what is best for housewives

D. Manufacturer Honeywell worked together with cookbook author Helen Corbitt

Correct answer: Honeywell experts have thought what is best for housewives

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Question 4: The picture shows an image of the Dutch National Hydraulic Laboratory in Delft. This laboratory played a crucial role in the design of the dams of the Delta works build after the flooding disaster of 1953. Why is this laboratory a typical example of the Age of Technocracy ?

A. Because they worked together with all stakeholders such as fishermen and environmentalists

B. Because they applied modelling to study the currents of the rivers and sea inlets

C. Because they were funded by private investors, to avoid political influence

D. Because the research was solely focused on societal problems of water management

Correct answer: Because they applied modelling to study the currents of the rivers and sea inlets

Question 5: In the book, Engineering the Future, Understanding the Past, the director of the Philips research laboratory (NatLab) from 1957 to 1972, Hendrik Casimir, described the relationship between physics and electrical / electronic products as a process of six essential research steps. We can label Hendrik Casimir as a true representative of the Technocratic Way of innovating. Select one:

A. Because his description of the six step research process was a true example of a linear innovation model

B. Because he followed the ideas of Vannevar Bush in stressing the importance of government funding for scientific research

C. Because his research model was based on a combination of public and private Research and Development investments

D. Because under his directorship, Philips' NatLab was reorganized according to these six research steps.

Correct answer: his description of the six step research process was an example of a linear innovation model

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Question 6: Which of the following statements best describes the hopes European scientist had for CERN in the postwar period ? Select one:

A. International science collaboration would rehabilitate the reputation of German scientists and technologies

B. International collaboration would produce basic research free of political interference

C. European research and development collaboration could close the knowledge lag that Europe had on the USA

D. Science and technologies would foster European integration in spite of the East-West split across the Iron Curtain

Correct answer: International collaboration would produce basic research free of political interference

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Question 7: During the Age of Participation enterprises became more receptive for social issues. This became known as Corporate Social Responsibility. Which of the following statements is a good definition of Corporate Social Responsibility ? Select one:

A. The responsibility of companies towards stakeholders and society at large, beyond merely serving shareholders.

B. The responsibilities of companies to fulfill their obligations to the spirit of the law and not just the letter of the law

C. The responsibilities of companies to maximize monetary to pay tax and value for shareholders

D. The responsibility of companies to provide society with superior products, services and innovations.

Correct answer: The responsibility towards stakeholders and society at large, beyond merely serving shareholders.

Question 8: What was considered to be the problem with systems-management and automation in the Age of Participation? Select one:

A. It led to increasing production costs and decreasing profits

B. It led to loss of jobs in the industrial sector

C. It optimized systems rather than labor conditions

D. It was open to user centered innovation

Correct answer: It optimized systems rather than labor conditions

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Question 9: In the 1980s the church, labor unions and local governments representatives in the Netherlands suggested a "citizen consultation" on nuclear power. The government agreed and organized 1900 public hearings, nationwide. The citizen consultation, was an example of what ? Select one:

A. A participation by protest approach

B. A participation by user citizens approach

C. A participation by delegation approach

D. A participation by mediation approach

Correct answer: A participation by mediation approach

Question 10: A municipality wishes to develop a vision on urban farming. To this end, it organizes a meeting inviting all active gardeners from collaborative gardens in the city. The meeting gets disturbed by a protest against the use of genetically-modified vegetables. After the security has removed the protesters, the meeting continues and results in a list of actions to be taken agreed upon by all represented parties. The list is:
• Deregulation of the use of space in the municipality, e.g. for purposes of urban farming
• Good information by the collaborative gardeners involved
• Making municipal grounds available to commercial urban farming exploitation
The meeting is a typical example of: (select one)

A. Participation by mediation

B. Participation by protest

C. User-centered innovation

D. Corporation under social pressure

Correct answer: Participation by mediation

Question 11: Below you see the Atomium building in Brussels Belgium. It was constructed for the World Exposition in 1958. The building is 102 m tall and the nine 18 m diameter stainless steel clad spheres are connected so that the whole forms the shape of an unit cell of an iron crystal magnified 165 billion times. The building resembles the ideas of the Age of Technocracy. Why is this a icon of the age of technocracy? Select one:

A. It shows the Belgian lead in science and technology at the time.

B. It became a meeting place of nuclear (atom) industries that developed the model of open innovation

C. It resembles a general interest in fundamental research at the time

D. It is a symbol of the European international collaboration in Research and Development.

Correct answer: It resembles a general interest in fundamental research at the time

Question 12: The slogans (1) "Small is beautiful" and (2) "Bigger is better" characterized, respectively:

A. (1) The Age of Technocracy, (2) The Age of Promise

B. (1) The Age of Crisis, (2) The Age of Technocracy

C. (1) The Age of Participation, (2) The Age of NeoLiberalism

D. (1) The Age of Participation, (2) The Age of Technocracy

E. (1) The Age of Promise, (2) The Age of Crisis

Correct answer: (1) The Age of Participation, (2) The Age of Technocracy

Question 13: What kind of difficulties did enterprises adopting a technocratic innovation approach experience? Select one:

A. Adopting a systems approach

B. Collaborating with universities

C. Connecting to markets and users

D. Attracting the best engineers

Correct answer: Connecting to markets and users

Question 14: During the Age of Technocracy modernist architects thought of users as "ideal" residents. In trying to 'do the right thing' for these projected users modernist architects insisted on designs that separated spaces according to their functions. In their view residents needed to act and live as modern citizens. How did home economists respond to this view? Select one:

A. By writing formal protests to the Ministry of Housing on behalf of residents

B. By tearing down walls and converting kitchens into multipurpose living rooms

C. By advising residents to refuse to pay rent for unpractical houses

D. By organizing counter expertise based on knowledge collected from residents

Correct answer: By organizing counter expertise based on knowledge collected from residents

Question 15: Above you see a road sign indicating a so called a 'Woonerf'. In a Woonerf pedestrians have priority over cars. The development of the 'Woonerf' is an example of what? Select one:

A. A declining influence of the car companies lobby on government

B. Greenwashing by traffic engineering and road building companies

C. Traffic engineers focusing on projected use of pedestrians and motorists

D. Activist users working together with traffic engineers

Correct answer: Activist users working together with traffic engineers

Question 16:

the Age of Promise, the "Infrastructure State" encouraged private companies to establish significant infrastructures. With which form of participation in the Age of Participation van we compare this? Select one:

A. Participatory Society

B. Participation by invitation

C. Participation by delegation

D. Participation by protest

Correct answer: Participation by delegation

Question 17: Introduced in 1992, Crystal Pepsi was marketed as a healthy and pure diet beverage. Sales were good at the beginning because many of the purchase were likely due to curiosity. However sales dropped sharply soon after. Consumers were not convinced by Pepsi's healthy message. Also cola drinkers preferred a darker color beverage. This kind of innovation failures are most UNLIKELY to happen in which period? Select one:

A. The Age of Crisis

B. The Age of Technocracy

C. The Age of Participation

D. The Age of Promise

Correct answer: The Age of Participation

Test 3

Daan 1-18

Question 1: What is active responsibility? Select one:

A. Backward looking responsibility, in the sense of being a proper target of blame for one's actions and the consequences of one's action.

B. Striving to prevent the negative effects of technology.

C. A moral responsibility that is based on moral obligations, moral norms or moral dues.

D. Responsibility before something has happened, referring to a duty to care for future states-of-affairs or persons.

Correct answer: Responsibility before something has happened, referring to a duty to care for future states-of-affairs or persons.

Question 2: Which of the following is a correct example of a role responsibility applied to Roger Boisjoly? Select one:

A. In his role as a professional engineer, he contributed causally to the disaster by designing a faulty component (a rubber sealing ring).

B. In his role as a professional engineer, his responsibilities are formally laid down in his legal and contractual obligations to Morton Thiokol.

C. In his role as an employee of Morton Thiokol, he was expected to be respectful and loyal to his managers.

D. In his role as an employee of Morton Thiokol, he should have gone to the public with his concerns about the risks of the launch.

Correct answer: In his role as an employee of Morton Thiokol, he was expected to be respectful and loyal to his managers.

Question 3: Which of the following best explains the fact that it is possible for an engineer to have conflicting responsibilities as a result of being both an employee of a company and a professional engineer? Select one:

A. Role responsibility.

B. Responsibility to be trustworthy.

C. Ideal responsibility.

D. Passive responsibility.

Correct answer: Role responsibility.

Question 4: Which of the following is mentioned as one of the factors leading to the disaster in the Challenger case? Select one:

A. A crucial component (a rubber sealing ring) had never been tested for reliability and had not been used in previous launches.

B. Engineers at Morton Thiokol remained silent about their concerns when talking to Morton Thiokol management.

C. Every time Morton Thiokol was consulted by NASA, Morton Thiokol recommended that the launch be allowed to go ahead.

D. Morton Thiokol worried that if the launch were stopped, NASA would not extend their contract.

Correct answer: Morton Thiokol worried that if the launch were stopped, NASA would not extend their contract.

Question 5: Which of the following is **not** an important part of active responsibility in individuals? Select one:

A. Displaying conduct that is based on a consistent and verifiable code.

B. An adequate perception of potential violation of moral norms.

C. Embracing the principle to always expect the worst outcome (precautionary principle).

D. Striving to achieve the best outcome, and being motivated by the desire to do so.

Correct answer: Embracing the principle to always expect the worst outcome (precautionary principle).

Question 6: Which of the following could NOT be an actor, as this term is defined in the book? Select one:

A. The board of directors of a company considering a purchase.

B. Several politicians having an argument with one another.

C. The crew of a ship trying to maneuver around an iceberg.

D. A government committee deliberating about public safety.

Correct answer: Several politicians having an argument with one another.

Question 7: Which of the following is the clearest example of paternalism? Select one:

A. In order to produce the most efficient production process for a company, engineers train workers so that the work is completed according to scientific principles.

B. In order to prevent users from harming themselves, engineers design a scooter that cannot be operated unless the user is wearing a helmet.

C. In order to prevent collusion and corruption, regulators formulate rules regarding the competition of engineering firms for government funded projects.

D. In order to protect the public, an engineer refuses to approve a plan to pump radioactive waste from one tank to another in an unsafe way.

Correct answer: In order to prevent users from harming themselves, engineers design a scooter that cannot be operated unless the user is wearing a helmet.

Question 8: Suppose the managers of Morton Thiokol are requested by the Presidential Commission to explain and justify the way they behaved during the period just before the Challenger disaster took place. Which of the following notions specifically describes the aspect of responsibility being invoked by the Presidential Commission in this request? Select one:

A. Blameworthiness.

B. Accountability.

C. Wrongdoing.

D. Liability.

Correct answer: Accountability

Question 9: According to the book, which of the following is a correct statement about the professional ideals of engineers? Select one:

A. The ideal of technological enthusiasm cannot be combined with the ideal of augmenting human welfare.

B. The ideal of efficiency is morally better than the ideal of technological enthusiasm.

C. The ideal of technological enthusiasm is morally better than the ideal of efficiency.

D. From a moral point of view, the ideal of augmenting human welfare is always worth pursuing.

Correct answer: From a moral point of view, the ideal of augmenting human welfare is always worth pursuing.

Question 10: Wendy trains to be an engineer, because she has heard that there are good career prospects for engineers on an otherwise scarce job market. Wendy's ideal of having good career prospects is:

A. Personal and professional, because it will encourage her to become a good engineer.

B. Personal but not professional, because good engineers care first and foremost about human welfare.

C. Personal but not professional, because it is not inherently tied to the engineering profession.

D. Personal and professional, because unemployed engineers cannot exercise their profession.

Correct answer: Personal but not professional, because it is not inherently tied to the engineering profession.

Question 11: According to the book. in order for somebody to be justifiably held responsible for a bad event that took place, they must have:

A. Been able to know that the event might come about as a result of their action or failure to act.

B. Had an underlying desire to do something wrongful.

C. Believed that the event was good, even thought it was evil.

D. Performed a positive action that physically caused the event (nor merely an omission that failed to prevent it).

Correct answer: Been able to know that the event might come about as a result of their action or failure to act.

Question 12: According to the book, which of the following is more effective than whistle-blowing as a way of tackling potential conflicts between engineers and managers?

A. Giving engineers more power and responsibility to make moral decisions for others, in order to promote their good.

B. Involving more actors and stakeholders in the design of technology and giving all actors specific responsibilities.

C. Dividing ethical responsibilities between engineers and managers, so that engineers are only responsible for the technology design.

D. Encouraging more constructive communication between engineers and managers.

Correct answer: Encouraging more constructive communication between engineers and managers.

Question 13: Which of the following is the best description of passive responsibility? Passive responsibility is:

A. The responsibility one should take when everyone else remains passive and refuses to do what is morally required in a situation.

B. The responsibility one has, even if one fails to act and is thus passive.

C. Backward-looking responsibility, which is ascribed after the event in the sense of holding someone accountable for his or her actions.

D. Forward-looking responsibility, which refers to a duty or task to care for certain states-of-affairs or persons.

Correct answer: Backward-looking responsibility, which is ascribed after the event in the sense of holding someone accountable for his or her actions.

Question 14: Which of the following is a valid excuse that completely exempts a person from being held passively responsible for a given action? Select one:

A. The person performed the action under pressure: for example, they would have lost their job if they did not perform the action.

B. The person performed the action for the sake of an important professional ideal, such as enthusiasm for technology.

C. The person did not violate a norm or do anything wrong.

D. The person had carefully considered the consequences of his or her actions before acting.

Correct answer: The person did not violate a norm or do anything wrong.

Question 15: Which of the following is a sound reason to doubt the tripartite model of the responsibilities of engineers?

A. Stakeholders also share responsibility for the wider negative social consequences of technology, and this directly contradicts the tripartite model.

B. Politicians and managers should not be held responsible for the wider social consequences of technology, as they are in the tripartite model.

C. Engineers who foresee and can freely prevent the wider negative social consequences of a given technology design, satisfy the conditions on moral responsibility in relation to those consequences. This directly contradicts the tripartite model of responsibility.

D. Whistle-blowing, which is sometimes required by the tripartite model, is too demanding and forces engineers to make unreasonably large sacrifices in order to prevent the wider negative social consequences of a technology design.

Correct answer: Engineers who foresee and can freely prevent the wider negative social consequences of a given technology design, satisfy the conditions on moral responsibility in relation to those consequences. This directly contradicts the tripartite model of responsibility.

Question 16: The book states that the active responsibility of engineers can be understood by looking at the ideals of engineers. According to the book, which characteristics do active responsibility and ideals always have in common?
Both active responsibility and ideals...

Select one:

A. ... require striving for a certain state of affairs in the future.

B. ... require one to display conduct that is based on a verifiable and consistent code.

C. ... are based on the expectations that people other than engineers themselves have towards the engineering profession.

D. ... imply the duty or task of caring for persons.

Correct answer: ... require striving for a certain state of affairs in the future.

Question 17: In ethical theory there are four classical criteria that play a role in assessing responsibility. Which of the following is **not** one of these criteria for moral responsibility?
Select one:

A. Foreseeability.

B. Professional role responsibility.

C. Causal contribution.

D. Wrong-doing.

Correct answer: Professional role responsibility.

Question 18: Which of the following elements is necessary in order for a person to be morally responsible for a bad consequence for his or her action?
Select one:

A. The individual was forced to act in such a way that the consequence was brought about.

B. The individual knew, or should have known, that the bad consequence was a possible outcome of his or her conduct.

C. The individual chose to do nothing and his or her inaction led to the bad consequence.

D. The individual violated an advisory code of conduct.

Correct answer: The individual knew, or should have known, that the bad consequence was a possible outcome of his or her conduct.

Test 4

Martin 1-27

Question 1: Prudence is the character trait of self-governance according to reason. This statement is an example of which of the following?

A. Moral choice.

B. Moral virtue.

C. Moral value.

D. Moral norm.

Correct answer: Moral virtue

Question 2: Which of the following is the main emphasis of care ethics?

A. Relationships with others.

B. Rules that should be adopted for dealing with vulnerable persons.

C. The precise meaning of care and when it makes specific actions right.

D. The individual and his or her development.

Correct answer: Relationships with others.

Question 3: Hans Jonas warned in his book "The Principle of Responsibility", about the dangers of modern technology for nature and the ecosystem. This proposition about Hans Jonas is an example of:

A. An ethical judgement.

B. A moral judgement.

C. A descriptive judgement.

D. A normative judgement.

Correct answer: A descriptive judgement.

Question 4: What are prima facie norms?

A. Norms that cannot be overruled by other norms that become evident when we take everything into consideration.

B. Universal principles of the form "Do A" which are the foundation of all moral judgements.

C. Conditional norms of the form "If you want X, do Y", which apply only if you actually do want X.

D. Norms that apply unless they are overruled by other more important norms that become evident when we take everything into consideration.

Correct answer: Norms that cannot be overruled by other norms that become evident when we take everything into consideration.

Question 5: When Bentham describes the idea of a moral balance sheet, which of the following claims does he make?

A. The only thing that matters to the balance sheet are the actual pain and pleasure caused by an action, not the general tendency of that action to cause pain or pleasure.

B. Legislators should always keep the moral balance sheet in view, but they cannot be expected to make an exact calculation for every moral or legal judgement.

C. A moral balance sheet is inapplicable to laws because laws are distinct from morality.

D. Pain is more important than pleasure on the balance sheet: it is more important to avoid pain than to produce positive pleasure through our actions.

Correct answer: Legislators should always keep the moral balance sheet in view, but they cannot be expected to make an exact calculation for every moral or legal judgement.

Question 6: Which ethical problem does the Ford Pinto case illustrate?

A. Without risk / benefit analysis it is impossible to make design tradeoffs.

B. Federal safety standards, regulations, and laws are often not followed.

C. Valuing life in monetary terms can lead to violations of neglecting human rights.

D. There can be legal consequences for companies like Ford for the damage their products cause.

Correct answer: Valuing life in monetary terms can lead to violations of neglecting human rights.

Question 7: What is the relationship between possessing the virtues and living the good life, according to Aristotle?

A. As long as it appears to society that a person has the virtues, they will have a flourishing life.

B. In cases where a person has a few of the important virtues he can have a flourishing life.

C. Virtues can help a person live a flourishing life, but are not necessary for it.

D. Without the virtues it is not possible to live a flourishing life.

Correct answer: Without the virtues it is not possible to live a flourishing life.

Question 8: Mary is an engineer working at a large company. She is also the manager of a unit at the company. She wants her team to better exemplify the excellences she associates with engineering, and she has read about Aristotelian virtue ethics. Following the advice of Aristotelian virtue ethics, what would be the best way of helping the team to develop excellences or virtues associated with engineering?

A. Everyone in the team should read a book about virtues, so as to understand the underlying theory of virtues for engineers.

B. Everyone should start to habitually performing what are regarded as virtuous actions, so as to practice being excellent.

C. Everyone should read a book and watch documentaries about virtuous people, so as to get information about what would be good examples to follow.

D. Everyone should just try to be themselves, and do what seems natural to them.

Correct answer: Everyone should start to habitually performing what are regarded as virtuous actions, so as to practice being excellent.

Question 9: What is the wide reflective equilibrium method?

A. An approach to ethics that gives a unique solution on the basis of the strength of different conflicting views among stakeholders.

B. An approach that aims at making different types of moral belief and judgements cohere with each other.

C. An approach to ethics that aims at making three types of moral theories (Utilitarianism, Kantianism, Virtue Ethics) cohere with each other.

D. A method of reflecting on the kinds of equilibrium-types that have wide application within ethical reasoning.

Correct answer: An approach that aims at making different types of moral belief and judgements cohere with each other.

Question 10: What is an ill-structured problem?

A. A problem in which there is a moral dilemma.

B. A problem about the indefiniteness of certain ethical theories.

C. A problem that is inconsistently formulated and can only be defined during the process of solving it.

D. A problem that comes up for the first time in the reflection step of the ethical cycle.

Correct answer: A problem that is inconsistently formulated and can only be defined during the process of solving it.

Question 11: Suppose a person is trying to determine whether it is morally right or wrong to commit plagiarism on their final assignment for a course. In making this determination, they compare the long-term consequences of not having a norm against plagiarism, versus those of having a norm against plagiarism. Which ethical theory is this person using?

A. Rule Utilitarianism.

B. Virtue Ethics.

C. Kantian Deontology.

D. Act Utilitarianism.

Correct answer: Rule Utilitarianism.

Question 12: Which of the following is an important limitation of the ethical cycle?

A. It does not consider all of the major theoretical perspectives on ethics.

B. Its emphasis is on individual judgment, whereas decisions are often collective.

C. It is only meant to consider cases in which there is a black and white dilemma about how to act.

D. The fact that it is iterative means that it is not guaranteed to be correct the first time you go through it.

Correct answer: Its emphasis is on individual judgment, whereas decisions are often collective.

Question 13: In applying the ethical cycle to the case Highway Safety, is the iterative character of the ethical cycle important for how we state and analyze the moral problem?

A. Yes, because the reflection step allows us to weight different ethical theories against one another and remove the irrelevant theories from earlier steps.

B. No, because the iterative character of the ethical cycle only applies to the later steps of the cycle.

C. No, because the moral problem is already obvious when we first consider the Highway Safety case.

D. Yes, because the moral problem becomes clear only when we examine the case from the perspective of deontological ethics.

Correct answer: Yes, because the moral problem becomes clear only when we examine the case from the perspective of deontological ethics.

Question 14: Unless the health of the mother is at risk, abortion is morally impermissible. This statement is an example of which of the following?

A. Moral choice.

B. Moral norm.

C. Moral value.

D. Moral virtue.

Correct answer: Moral norm.

Question 15: One of our company's core commitments is to have equality between all persons. This statement is an example of which of the following?

A. Moral choice.

B. Moral norm.

C. Moral value.

D. Moral virtue.

Correct answer: Moral value.

Question 16: Kant's universality formulation of the categorical imperative would offer which of the following explanations for why it is wrong to steal a cookie I desire from the canteen?

A. By stealing the cookie I prevent someone who could have gained greater happiness from the cookie from eating it.

B. Stealing involves a logical contradiction because you can only steal things that are owned by someone else, but if everyone stole things they desired then the private property would not exist.

C. Even though I desire it in the moment, after eating the cookie it is likely that I will feel guilty and this means I have acted irrationally.

D. When I steal the cookie I am treating the person who makes and sells the cookie as if they were merely a means to my ends.

Correct answer: Stealing involves a logical contradiction because you can only steal things that are owned by someone else, but if everyone stole things they desired then the private property would not exist.

Question 17: A core notion of Kantian ethics is the idea of autonomy. For Kant, what does autonomy consist of?

A. A person is able and free to do whatever they wish to do.

B. A person is free to ignore the moral law.

C. A person is able to determine what is morally correct through reasoning.

D. A person is able to follow hypothetical imperatives of reason.

Correct answer: A person is able to determine what is morally correct through reasoning.

Question 18: Romantic love should be encouraged and promoted by the society because loving relationships promote individual health, sense of well being, and longevity. Being in love also makes a person more likely to be kind to others. Which type of value does the passage above assign to love?

A. Intrinsic.

B. Normative.

C. Instrumental.

D. Descriptive.

Correct answer: Instrumental.

Question 19: One of the Kantian principles that we discuss in this class states that you should act on a maxim such that you can at the same time will that is should be a universal law. What does the second main Kantian principle discussed in the course state?

A. Always act on a maxim that is an end in itself, and never a means only.

B. Act so as to treat yourself always as an end in itself, and never as a means.

C. Act on a maxim that maximizes overall happiness.

D. Act so as to treat the humanity in each person, always as an end in itself, and never as a means only.

Correct answer: Act so as to treat the humanity in each person, always as an end in itself, and never as a means only.

Question 20: Which of the following is a normative judgment as opposed to a descriptive judgment?

A. 15th Century Spanish colonists in the Americas killed many Aztec people.

B. One is obligated refrain from killing, no matter the costs or benefits of doing so.

C. It was considered morally acceptable by the Spanish colonists to buy and sell slaves.

D. The Aztecs believed that the execution was a justified punishment for promiscuity.

Correct answer: One is obligated refrain from killing, no matter the costs or benefits of doing so.

Question 21: Normative relativism is the theory that what is right for me is determined by my own opinion, and all moral points of view are equally valid. Why is it called normative relativism?

A. Because it is meant to promote happiness and human welfare.

B. Because it describes our existing morality, including our customs and habits.

C. Because it describes what is actually the case regarding ethics.

D. Because it formulates recommendations for how to act or live.

Correct answer: Because it formulates recommendations for how to act or live.

Question 22: Peter is an engineer facing an ethical dilemma at work. He wants to use care ethics to come up with a solution. Using care ethics what information would Peter need to find out in order to solve the ethical dilemma?

A. Facts about how the people at this workplace fell about their job.

B. General principles about the engineering profession.

C. Information about what professional ethicists have said about similar situations.

D. An account of the relationships, responsibilities and roles at this workplace.

Correct answer: An account of the relationships, responsibilities and roles at this workplace.

Question 23: In Kantian theory, to say that Smith is treating Jones merely as a means is equivalent to saying that Smith is:

A. Harming Jones.

B. Failing to help develop Jones' virtue.

C. Not maximizing Jones' happiness.

D. Using Jones as if Jones were only a tool.

Correct answer: Using Jones as if Jones were only a tool.

Question 24: What is the difference between normative judgments and descriptive judgments?

A. Whereas normative judgments are about what people ought to do and about what is right and good, descriptive judgments are about how things are.

B. Whereas normative judgments are about challenges for the future, descriptive judgments are about how things were in the past.

C. Whereas normative judgments are about what is normal, descriptive judgments are about what some people describe as normal.

D. Whereas normative judgments are about what people think, descriptive judgments are about how things actually are.

Correct answer: Whereas normative judgments are about what people ought to do and about what is right and good, descriptive judgments are about how things are.

Question 25: In cases where the ethical theories disagree with one another about what a person should do in a concrete situation, in what way are they still helpful from an ethical point of view?

A. By putting them together into a single viewpoint, one is guaranteed to perform the right action.

B. They help to suggest possible reasons and arguments for acting in one way rather than the other.

C. In such cases we should delay acting until we have found a more certain judgment about what to do.

D. It is helpful to learn that no ethical theory is correct, because that shows that, ethically speaking, one may do whatever one likes.

Correct answer: They help to suggest possible reasons and arguments for acting in one way rather than the other.

Question 26: According to Aristotle's virtue ethics, how do we acquire virtues?

A. People learn about virtues by studying philosophy, and by reading about virtuous people.

B. People are born with a potential to become virtuous. But to become virtuous (e.g. just) we have to go through a process of habituation, and we also need a good upbringing.

C. People are born with various virtues. What we have to do is to make sure that we don't lose the virtues we are born with.

D. Most people cannot acquire any virtues. But some people who read the right books and receive the right education are able to become virtuous.

Correct answer: People are born with a potential to become virtuous. But to become virtuous (e.g. just) we have to go through a process of habituation, and we also need a good upbringing.

Question 27: According to Kant's ethical theory, human beings possess which of the following kinds of values?

A. Descriptive.

B. Instrumental.

C. Explanatory.

D. Intrinsic.

Correct answer: Intrinsic.

Test 5

Martin 1-20

Question 1: Which of the following has been proposed as an ethical value that is an essential part of the concept of a profession?

A. Professionals act according to an ideal of reciprocity, such that they themselves act as they would like others to act.

B. Professionals require a great deal of specialized training.

C. Professionals provide goods that are meant to serve and benefit society.

D. Professionals are the only ones who have the virtues necessary to carry out the work that they do.

Correct answer: Professionals provide goods that are meant to serve and benefit society.

Question 2: Obligations from codes of conduct relate to different domains. Read the following obligation: "Engineers shall not be influenced in their professional duties by conflicting interests." To which of the following domains does this obligation primarily belong?

A. Social responsibility and obligations towards the public.

B. Integrity and competent professional practice.

C. Corporate responsibility and obligations to stakeholders.

D. Obligations towards clients and employers.

Correct answer: Integrity and competent professional practice.

Question 3: Milton Friedman is critical of the notion of corporate social responsibility for several reasons. Which one of the following is a plausible response to his criticism?

A. Corporations have a moral duty to maximize profits for their stockholders; using funds in any other way is theft.

B. Without corporate social responsibility there would be no institutions available to provide for the needs of citizens and protect stakeholder interests.

C. In emerging technologies, it takes the law significant time to catch up; thus corporations need to consider their responsibilities that go beyond the law.

D. When corporations engage in social responsibility campaigns, it is usually just done for "window-dressing" purposes and is inauthentic.

Correct answer: In emerging technologies, it takes the law significant time to catch up; thus corporations need to consider their responsibilities that go beyond the law.

Question 4: Is it appropriate to adopt global codes of conduct in the engineering profession? Why or why not?

A. Yes, because engineering activities often cross national boundaries as a result of globalization.

B. Yes, because even though engineering is almost always a local activity, many local engineering organizations would find it useful not to have to "reinvent the wheel" by writing their own (different) codes.

C. No, because engineering projects are almost always governed by the laws of the country where the engineering firm is based.

D. No, because cultural differences mean that it would be impossible to come up with a set of universal global norms for engineering.

Correct answer: Yes, because engineering activities often cross national boundaries as a result of globalization.

Question 5: "In our research group and firm we strive to innovate solutions that serve human beings, with the values of health, sustainability, and transparency at the forefront of all of our activities. We envision every member of our team providing reliable expertise in their field and demonstrating a commitment to responsible innovation and an ethos of cooperation and teamwork."

The excerpt from the professional code cited above is best characterized as a/an:

A. Disciplinary code.

B. Complementary code.

C. Advisory code.

D. Aspirational code.

Correct answer: Aspirational code.

Question 6: Why is the case of the Herald of Free Enterprise not a convincing example of a problem of many hands?

A. The capsizing was caused by a severe storm.

B. The shipping company was solely responsible for the disaster.

C. Some of the individuals involved meet the conditions for individual moral responsibility.

D. The disaster was caused by severe designer mistakes in the outer bow doors.

Correct answer: Some of the individuals involved meet the conditions for individual moral responsibility.

Question 7: In the US and the European Union, which of the following situations excuses the manufacturer of a defective product from having to pay damages?

A. The manufacturer did not violate any duty of care toward users or others.

B. The damage is not financial in nature.

C. There is no proven causal relation between the product and the damage caused.

D. The manufacturer did not intend to cause any damage.

Correct answer: There is no proven causal relation between the product and the damage caused.

Question 8: Which fact contributed to the structural deficiency of the CitiCorp building in midtown New York?

A. The change from bolted to welded joints.

B. LeMessurier, the designer of the building, lacked the required expertise to anticipate the structural deficiency.

C. The building did not meet the New York City building code.

D. The unusual design of the building.

Correct answer: The unusual design of the building.

Question 9: Which of the following is an advantage of the hierarchical responsibility model?

A. It is fairer than other models because it only holds a person responsible for his or her contribution to a project.

B. It makes corporate liability possible.

C. It is fairer than other models because it holds everyone equally responsible for the actions of the group.

D. It may motivate managers to obtain more information and to better manage the organization.

Correct answer: It may motivate managers to obtain more information and to better manage the organization.

Question 10: Which of the following is true of legal liability, but not moral responsibility?

A. Legal liability is forward-looking because the law is meant to deter bad behavior.

B. Legal liability is based on specific conditions that must be met, such as a causal connection to harm or damage.

C. Legal liability always depends on a formal procedure.

D. Legal liability always requires either negligence or purposeful wrongdoing.

Correct answer: Legal liability always depends on a formal procedure.

Question 11: Obligations from codes of conduct relate to different domains. Read the following obligation: "Engineers shall carry out their tasks so as to prevent avoidable danger to health and safety, and prevent avoidable adverse impacts on the environment." To which of the following domains does this obligation primarily belong?

A. Integrity and competent professional practice.

B. Obligations towards clients and employers.

C. Corporate responsibility and obligations to stakeholders.

D. Social responsibility and obligations towards the public.

Correct answer: Social responsibility and obligations towards the public.

Question 12: Which of the following situation represents a conflict of interest?

A. An engineer wants to ask for a raise in her salary because she has performed particularly well this year, but she is nervous about doing so.

B. An engineer suddenly becomes aware of a dangerous design flaw in a product her company is about to launch, but she is also a large shareholder in a company with a competing product.

C. An engineer works for a corporation that develops new implantable pharmaceutical devices for psychiatric issues and is at the same me married to a person who has a psychiatric illness.

D. An engineer has been struggling with the stress of his job and has thus handed in several projects after the deadline.

Correct answer: An engineer suddenly becomes aware of a dangerous design flaw in a product her company is about to launch, but she is also a large shareholder in a company with a competing product.

Question 13: Which of the following is true of the moral fairness requirement for distributing responsibility?

A. In the Citicorp case, the moral fairness requirement recommends using the individual responsibility model.

B. It does not apply to active responsibility.

C. It says that one should distribute responsibility in the way that has the best consequences.

D. It says that one can only hold a person passively responsible if the person could have foreseen the consequences of his or her action.

Correct answer: It says that one can only hold a person passively responsible if the person could have foreseen the consequences of his or her action.

Question 14: Consider the following statement as part of a corporate code of conduct: "Employees should always use a secure company email account to send business-related messages." Which section of a corporate code does this statement best fit into?

A. Responsibility to stakeholders.

B. Norms and rules.

C. Core values.

D. Mission statement.

Correct answer: Norms and values.

Question 15: Obligations from codes of conduct relate to different domains. Read the following obligation: "Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of those for whom they are carrying out work." To which of the following domains does this obligation primarily belong?

A. Obligations towards clients and employers.

B. Social responsibility and obligations towards the public.

C. Corporate responsibility and obligations to stakeholders.

D. Integrity and competent professional practice.

Correct answer: Obligations towards clients and employers.

Question 16: After the disaster with the Herald of Free Enterprise, the shipping company, Townsend Thoresen, was prosecuted for manslaughter. This is an example of:

A. Corporate liability.

B. Product liability.

C. Professional liability.

D. Developmental liability.

Correct answer: Corporate liability.

Question 17: Suppose the goalkeeper of the football club Manchester United fails to block three attempted shots, and as a result loses an important game against a much weaker team. According to the collective responsibility model, which of the following responses would be most appropriate?

A. The top person involved in daily play and operations - the team manager for the collective - is held responsible.

B. The goalkeeper is held responsible because he was the one who directly caused the loss for the collective.

C. The entire team is held collectively responsible and sent to extra practice sessions.

D. Nobody in the team is held responsible, because the goalkeeper did not intend to cause the team to lose.

Correct answer: The entire team is held collectively responsible and sent to extra practice sessions.

Question 18: Imagine an employee who places the interests of her employer, as the employer defines those interests, above any other considerations. What would this employee be guilty of?

A. Window-dressing.

B. A conflict of interest.

C. Undue influence.

D. Uncritical loyalty.

Correct answer: Uncritical loyalty.

Question 19: The V-chip case illustrates how the design of a technology can influence how responsibility is distributed because:

A. It decreased collective responsibility for the content that children watch.

B. It introduced the values of "good taste" and aesthetic concerns into the regulation of TV programming.

C. It modified the division of labor involved in protecting children from inappropriate content.

D. Legal liability is forward-looking because the law is meant to deter bad behavior.

Correct answer: It modified the division of labor involved in protecting children from inappropriate content.

Question 20: Which of the following described, by definition, a situation in which there is a problem of many hands?

A. A collective can reasonably be held morally responsible for a given outcome, while none of the individuals in the collective can reasonably be held responsible for that outcome.

B. There is a particular person responsible for a given outcome, but he or she shields herself from being held responsible by putting the blame on multiple other people.

C. All the individuals involved in producing a given outcome can reasonably be held morally responsible for it, while the collective to which they belong cannot reasonably be held morally responsible for it.

D. Each individual involved in producing a given outcome can be held responsible to some degree, but there is uncertainty about the proportions of each person's contribution.

Correct answer: A collective can reasonably be held morally responsible for a given outcome, while none of the individuals in the collective can reasonably be held responsible for that outcome.

Test 6

Martin 1-23

Question 1: Which of the following methods for making decisions in cases of value conflict in design can help solve those value conflicts by technical means?

A. Cost-benefit analysis

B. Multiple criteria analysis

C. Value Sensitive Design

D. Regulatory framework

Correct answer: Value Sensitive Design

Question 2: Which of the following cases involves a definite value conflict?

A. The situation in which safety is a dominant value, but it is unclear exactly what the threshold of safety should be.

B. A case where there are multiple values involved, each recommending the same action.

C. A case in which two values are involved, but one value trumps the other.

D. The search for an alternative to the refrigerant CFC12.

Correct answer: The search for an alternative to the refrigerant CFC12.

Question 3: In 1998, a German high speed Intercity Express train derailed, killing 101 people. Which of the following was not one of the factors that led this disaster?

A. Failure to follow procedures for routine checks of the wheels.

B. A conflict between the values of safety and comfort.

C. Failure to consider existing experience and materials theory when implementing the new wheel design.

D. Inappropriate application of standards originally meant for one technology to a new, innovative technology.

Correct answer: Failure to follow procedures for routine checks of the wheels.

Question 4: Suppose there is a case in which a choice has to be made between two options in the design of a technology. One of the options is best for the value of usability, the other option is best for the value of security, and neither value trumps the other in terms of its importance. What is the best term to describe this situation?

   A. It is a value conflict between usability and security.

   B. It is a situation where there is common ground between usability and security.

   C. It is a trade-off that can be uniquely solved using Value Sensitive Design.

   D. It is a situation of incommensurability between usability and security.

Correct answer: It is a value conflict between usability and security.

Question 5: Steven is part of a team doing research on the improvement of self-management systems in health care. The research team is using value sensitive design. In the current stage of research, they are developing prototypes that meet safety standards for people who will use these systems. Which kind of investigation are they using in this stage?

   A. Ethical investigation.

   B. Empirical investigation.

   C. Technical investigation.

   D. Conceptual investigation.

Correct answer: Technical investigation.

Question 6: What is a negative feedback mechanism?

   A. A mechanism used to provide engineers with negative feedback on their work when there is an ethical problem.

   B. A mechanism that ensures that a device shuts down if the device fails or an operator loses control.

   C. A mechanism that makes sure that no feedback is generated.

   D. A feedback mechanism that has a negative value, in terms of expected utility.

Correct answer: A mechanism that ensures that a device shuts down if the device fails or an operator loses control.

Question 7: Does Kantian ethics imply an equality principle for the distribution of collective risks? Why?

   A. No, because different humans have an equal capacity to experience pleasure or pain, and therefore should be exposed to different levels of risk.

   B. Yes, because by the law of reason, all people give informed consent to the same level of personal risk.

   C. Yes, because all humans have equal and universal worth, and so they all have an equal right to be free from collective risks.

   D. No, because not everybody contributes equally to society, so people deserve to be exposed to different levels of risk.

Correct answer: Yes, because all humans have equal and universal worth, and so they all have an equal right to be free from collective risks.

Question 8: What is the difference between a hazard and a risk?

   A. A hazard is something bad that is certain to happen, whereas a risk is something bad that might happen.

   B. A hazard is a bad or undesirable effect in general, whereas a risk is the product of the probability of an undesirable event and the effect of that event.

   C. A hazard is a danger analyzed in release assessment, whereas a risk can be any form of danger within risk assessment.

   D. A hazard is something perceived by the public, whereas a risk is something analyzed by science.

Correct answer: A hazard is a bad or undesirable effect in general, whereas a risk is the product of the probability of an undesirable event and the effect of that event.

Question 9: How can Kantianism be used to justify the adoption of general standards for acceptable risk ("standardization")?

   A. Kant's reciprocity principle implies that each individual may choose whatever level of societal risk they want to be exposed to individually, and the average level becomes the standard for everybody in society.

   B. Kant's reciprocity principle implies that risks should be reciprocally equivalent, and this implies that they must be standardized according to their probability.

   C. Kant's universality principle supports the view that no person should ever be exposed to an unfair level of risks, and risks above this level must be prohibited.

   D. Kant's universality principle supports the view that each individual may autonomously choose whatever level of risk they find acceptable, and risks above this level must be prohibited for that individual.

Correct answer: Kant's universality principle supports the view that no person should ever be exposed to an unfair level of risks, and risks above this level must be prohibited.

Question 10: Which of the following is an important characteristic of multiple criteria analysis?

A. Values are expressed using contingent validation in multiple criteria analysis.

B. Multiple criteria analysis applies thresholds to each value to ensure that all value criteria are met.

C. The results of multiple criteria analysis can depend on the measurement scale that is used.

D. Values are considered to be ethically incommensurable in multiple criteria analysis.

Correct answer: The results of multiple criteria analysis can depend on the measurement scale that is used.

Question 11: The case of Herbicide 2,4,5-T primarily illustrates the point that

A. Tests must have a control group in order to be reliable.

B. Organizational deviance can leaf to a series of decisions that are individually benign but collectively harmful.

C. Despite the fact the technology was used as prescribed, the technology was unsafe.

D. Tests must be representative of the circumstances where the technology is actually used.

Correct answer: Tests must be representative of the circumstances where the technology is actually used.

Question 12: Which of the following is NOT an element of Value Sensitive Design approach?

A. Identify relevant values

B. Measure values in the implementation of designs.

C. Devise empirical value criteria.

D. Weigh incommensurable values.

Correct answer: Weigh incommensurable values.

Question 13: Using the principle of informed consent, how might we ethically evaluate the impacts of nuclear energy on people who live thousands of years in the future?

A. We can conduct a societal experiment, and determine later whether those people consent to the experiment.

B. We can consider what those people would hypothetically consent to, by asking; would future generations consent to our use of nuclear energy, if we asked them?

C. We can calculate the likely effects on those future people in terms of probability of different consequences for their well-being.

D. We may safely disregard those people because they cannot meaningfully give their informed consent to what we do now.

Correct answer: We can consider what those people would hypothetically consent to, by asking; would future generations consent to our use of nuclear energy, if we asked them?

Question 14: Which of the following events was caused mainly by a failure to cooperate and share responsibility between different actors?

A. The continued use of asbestos throughout the beginning of the Twentieth Century, which led to many asbestos-related diseases.

B. The DC-10 disaster of March 3, 1974, in which the freight door of a DC-10 opened during flight and 346 people died in the resulting crash.

C. The Tacoma Narrows Bridge Collapse, in which a bridged subjected to side winds vibrated until it ripped apart.

D. The use of nano particles with potentially hazardous properties in consumer products such as sporting goods.

Correct answer: The DC-10 opened during flight and 346 people died in the resulting crash.

Question 15: What is a societal experiment?

A. An experiment in which there is controlled observation under laboratory conditions, and this is generalized to society as a whole.

B. The experimental introduction of a new technology, where the informed consent of society if required before the experiment may begin.

C. The introduction of a new technology in society before risks and hazards are known, where risks and hazards become known after the technology is actually introduced into society.

D. An experiment in which society itself is changed in a way that involves societal risks.

Correct answer: The introduction of a new technology in society before risks and hazards are known, where risks and hazards become known after the technology is actually introduced into society.

Question 16: Which of the following is not considered a moral virtue, yet helped engineers resolve value conflicts in the case of the Storm Surge Barrier in the Eastern Scheldt?

A. Honesty.

B. Loyalty.

C. Frugality.

D. Creativity.

Correct answer: Creativity.

Question 17: Which ethical theory is most likely to use contingent validation as a method to solve value conflicts?

A. Virtue ethics.

B. Utilitarianism.

C. Care ethics.

D. Kantianism.

Correct answer: Utilitarianism.

Question 18: What is the key difference between a personal risk and a collective risk?

A. A personal risk is a risk that only affects an individual, whereas a collective risk is a risk that affects a collective of people.

B. A personal risk is a risk that a person takes intentionally, whereas a collective risk is a risk people are exposed unintentionally

C. A personal risk is a risk for which legal measures such as standardization are required, whereas a collective risk is one in which a societal decision has to be made.

D. A personal risk is ethically negligible, whereas a collective risk is ethically important.

Correct answer: A personal risk is a risk that only affects an individual, whereas a collective risk is a risk that affects a collective of people.

Question 19: What is the precautionary principle?

A. A principle that says to take precautionary measures before acting when there are ethical objections, such as in the case of human cloning.

B. a principle that says to take precautions before acting whenever there is no "best available technology".

C. A principle that says to take precautions must be taken if there are indication that there is a hazard, even if it is not scientifically known how probable the hazard is.

D. A principle that says to take precautions before acting if there are collect or societal risks.

Correct answer: A principle that says to take precautions must be taken if there are indication that there is a hazard, even if it is not scientifically known how probable the hazard is.

Question 20: "The loss of a good friend cannot be compensated by having a better career or more money." This statement illustrates:

A. The difference between intrinsic and instrumental values.

B. The difference between protected and non-protected values.

C. The intrinsicality of values.

D. The incommensurability of moral values.

Correct answer: The incommensurability of moral values.

Question 21: Which of the following cases involves a definite value conflict?

A. A case where there are multiple values involved, each recommending the same action.

B. The search for an alternative to the refrigerant CFC12.

C. The situation in which safety is a dominant value, but it is unclear what the exact threshold of safety should be.

D. A case in which two values are involved, but one value trumps the other.

Correct answer: The search for an alternative to the refrigerant CFC12.

Question 22: Which of the following is a method used in risk assessment?

A. Creating a fault tree or an event tree.

B. Determining how to inform the public about risks and hazards.

C. Finding the degree of informed consent in relation to risk.

D. Finding out what the best available technology is to perform a certain function.

Correct answer: Creating a fault tree or an event tree.

Exam 2015

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Introduction

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Question 1:   Nowadays, leading engineers debate about the "Engineers' Grand Challenges" in the near future. What is the most important goal of this debate?

A. To promote the professionalisation of the technical sciences

B. To promote the technical sciences to find proportionate funds from social partners

C. To protect the technical sciences from pressure from the outside by managers and politicians

D. To solve problems in society by breakthroughs in science and technology

Correct answer: To solve problems in society by breakthroughs in science and technology

Question 2:   Nowadays, technical universities are adding engineering skills necessary for the 21st century to their curricula. The TU/e USE program is an example of this. What is the goal of the USE program according to the educational view of the TU/e? To educate students in the 21st century skill of:

A. International collaboration

B. Developing technical excellence

C. Being an excellent manager

D. Working in a multidisciplinary team

Correct answer: Working in a multidisciplinary team

Question 3: The Tu/e website of the Science and Technology of Nuclear Fusion group features the following quote: "Fusion may have a wonderful image as a sustainable energy source - it is clean, zero CO2, safe and the fuel is abundant, for all and for ever - it has one big drawback: building a fusion reactor is of surpassing scientific and technological difficulty. A challenge for the engineer!". To which USE aspect does this quote refer ? Select one:

A. Users

B. Society

C. Enterprise

Correct answer: Society

Question 4: Which of the USE nightmares below is also a moral problem?

A. Enterprise nightmare: An enterprise develops a new smartphone with a flexible screen that you can fold and put in your pocket. Because of a malfunctioning business plan the company goes bankrupt.

B. Enterprise nightmare: An enterprise develops a healthcare robot which helps the elderly in their home environment. A competitor develops a very comparable robot which is cheaper. The first company goes bankrupt, because the customers think the healthcare robot is too expensive

C. Society nightmare: The town of Greenville has a shortage of money. The mayor has to choose between helping the hospital purchase expensive healthcare technology which can potentially save lives, or invest in extra traffic measures that would lower the amount of lethal victims.

D. User nightmare: A company develops a self-driving car. A group of users lobbies to forbid the development of this car, because they fear this will limit their driving enjoyment.

Correct answer: Society nightmare: The town of Greenville has a shortage of money. The mayor has to choose between helping the hospital purchase expensive healthcare technology which can potentially save lives, or invest in extra traffic measures that would lower the amount of lethal victims.

Question 5: Which of the following statements characterizes the ethical responsibilities of the engineer of the 21st century?

A. It is probable that they are going to work as isolated inventors, and that is why they should be able to give an autonomous judgement.

B. It is probable that their work has to respond to societal challenges, and that is why they should be able to translate societal values to a technological design.

C. It is probable that they have to work in interdisciplinary teams, and that is why they should delegate the taking of ethical decisions in a rational way to the ones with more expertise in the team.

D. It is probable that they will do pure research in an R&D environment, and that is why they should know when conflicts with management result in an ethical dilemma.

Correct answer: It is probable that their work has to respond to societal challenges, and that is why they should be able to translate societal values to a technological design.

Question 6: USE plays a big role in working on the "Engineers Grand challenges" because USE distinguishes between the success and failure of innovation on one side and between the possible societal gains and damage on the other side

A. True

B. False

Correct answer: True

U, S and E aspects of dreams and nightmares

Question 7: In "The Age of Promise", Poul La Cour developed small scale technologies on the area of energy like the first electric wind turbine. He wanted that farmers - just like city residents - could profit from modern technology. Which type of need is illustrated by La Cour and the electrical wind turbine according to the reader "Engineers in a changing world"?

A. A User need

B. A Societal need

C. An entrepreneurial need

Correct answer: A User need

Question 8: In the "Age of promise", the International Telecommunications Union was one of the first international engineering associations. The ITU worked on issues like user fees to make telecommunication more generally accessible. Which type of promise does this fulfill according to the reader "Engineers in a changing world"

A. A User need

B. A Societal need

C. An entrepreneurial need

Correct answer: A societal need

Question 9: Which of the following elements does not belong to the dream of Taylorism as described by F.W. Taylor in "Principles of Scientific Management 1911?"

A. Ending workplace conflicts between managers and laborers

B. Ending inequalities between male and female employees

C. Increasing the productivity of enterprises

D. Increasing the wage for laborers

Correct answer: Ending inequalities between male and female employees

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Question 10: What is a characteristic technology developed by "The Minimal State" during "The Age of Promise", according to the reader "Engineers in a Changing World"? Improving:

A. Canals and rivers

B. Schools and orphanages

C. Housing

D. Hospitals

Correct answer: Canals and rivers

Question 11: During "The age of promise", engineers dreamt of building new enterprises and improving the companies prestations. They developed new organizational company strategies based on innovation- and engineering sciences. Which of the following strategies is **not** mentioned in the reader "Engineers in a Changing World"?

A. The organization of labor relations

B. The professionalization of the management

C. The professionalization of the innovation process

D. The upscaling of the production process

Correct answer: The organization of labor relations

Question 12: During "The Age of Crisis" the patent war was one of the nightmares of the enterprises. Which consequence did the patent war have according to the reader "Engineers in a changing world"?

A. The increase of small scale enterprises

B. A decreasing amount of independent inventors

C. An increasing investment in academic research

D. Founding public institutes of knowledge

Correct answer: A decreasing amount of independent inventors

Question 13: Innovation became influenced by users in several ways during "The Age of Promise". How can User-consumers influence the technological process?

A. By demanding fair circumstances for employees

B. By buying products and changing the design

C. By buying products or not

D. By using them differently than the designers intended

Correct answer: By using them differently than the designers intended

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Question 14: During "The Age of Crisis", national trade organizations of chemical scientists *LiketheAmericanChemicalSociety* worked on chemical warfare for the defense of their countries. They argued that "Gas warfare is a blessing

...

and will make for future security, peace and happiness of the world"*Citedfromthereader"EngineersinaChangingWorld"*. How did those trade organizations see chemical weapons?

A. As a User promise

B. As a User nightmare

C. As a Societal promise

D. As a Societal nightmare

Correct answer: As a Societal promise

Question 15: The Belgian chemist Leo Baekeland, founder of the General Bakelite Company, is according to the reader *Engineers in a Changing World* a characteristic example of an *'opportunity seeking entrepreneur'*.

A. True

B. False

Correct answer: False

Question 16: With the words *"Electricians are gradually acquiring business habits, and business men see that it is necessary to be technical also"*, electrical engineer James Swinburne pointed towards two kinds of entrepreneurs: the *'inventor entrepreneurs'* and the *'opportunity seeking entrepreneurs'*

A. True

B. False

Correct answer: True

Ethics, Technology and USE

Question 17: Which of the following claims is best referring to the theory of mediation in Ethics?

A. Ethics is a case of things, because technologies have always influenced the context in which they fulfill their purposes.

B. Ethics is a case of humans. Only humans have intentions and agency, thus ethics should aim towards man-made actions and decisions.

C. Designers are not responsible for the unintentional consequences of technology. Ethics should thus focus on the users of technology.

D. Designers are responsible for all consequences regarding the use of technology, including unintentional consequences. Ethics should thus focus mainly on designers.

Correct answer: Ethics is a case of things, because technologies have always influenced the context in which they fulfill their purposes.

Question 18: Technological Mediation in ethics is:

A. The idea that technology aims to satisfy the needs of different stakeholders.

B. The idea that technology will develop towards an 'internet of things' and a convergence between reality and virtual reality.

C. The phenomenon that when technologies fulfill their purposes, they also shape the actions and observations of their users.

D. The phenomenon that when technologies fulfill their purposes, they also have intentional and unintentional consequences.

Correct answer: The phenomenon that when technologies fulfill their purposes, they also shape the actions and observations of their users.

Question 19: Utilitarianism refers to a class off approaches in ethics where:

A. An action is being regarded as morally correct if this is done out of a motivation of courage, honesty and wisdom

B. An action is being regarded as morally correct if this is in correspondence with an honest and righteous moral rule $law, norm or principle$

C. Happiness and increasing prosperity of others and yourself are of primary importance.

D. Relationships and the duties towards your neighbors are of primary importance

Correct answer: Happiness and increasing prosperity of others and yourself are of primary importance.

Question 20: On which of the following questions does virtue ethics mostly focus?

A. How can I be a good person?

B. What is the universal moral principle?

C. What kind of consequences should I try to maximalize?

D. What kind of actions is good and what kind is bad?

Correct answer: How can I be a good person

Question 21: Which of the following statements is one of John Stuart Mill's?

A. A happy pig and a happy human are equal from a moral point of view.

B. An individual must have the freedom to pursue his goals, as long as he does not harm others.

C. Morality mainly concerns the restricting of opportunities for people to harm themselves.

D. Morality is based on obeying the law.

Correct answer: An individual must have the freedom to pursue his goals, as long as he does not harm others.

Question 22: According to Kantian ethics, I do not act necessarily immoral, when I "use" a shopping assistant to buy something for my own means,

A. because the categorical imperative is not applicable on business transactions.

B. because the shopping assistant can in principle agree to be "used" in this way.

C. because I need to make this purchase in order to survive.

D. because I can give a part of what I buy to the poor.

Correct answer: because the shopping assistant can in principle agree to be "used" in this way.

Question 23: Does, according to Kant, a categorical imperative express a morally valid command to all rational agents (actors)?

A. Yes, because categorical imperatives are based on broadly carried beliefs within most societies. That is why they are universally valid.

B. Yes, because a categorical imperative is solely based on reason, and thus, that must be accepted by all reasonable agents (actors).

C. No, because categorical imperatives are solely meant to express specific subjective preferences of different individuals.

D. No, because a categorical imperative is based on the wish to be happy and gives rules how to achieve this happiness.

Correct answer: Yes, because a categorical imperative is solely based on reason, and thus, that must be accepted by all reasonable agents (actors).

Question 24: Prima facie norms differ from categorical norms because:

A. prima facie norms only apply for face-to-face interaction.

B. prima facie norms only have to be fulfilled when that is the situation with the best consequences.

C. prima facie norms only apply to some people.

D. prima facie norms can be pushed aside by more important business.

Correct answer: prima facie norms can be pushed aside by more important business.

Question 25: Utilitarianism emphasizes which of the following values most?

A. Autonomy.

B. Equality.

C. Freedom of pain and suffering.

D. Care for others.

Correct answer: Freedom of pain and suffering.

Question 26: Virtue ethics emphasizes which of the following elements?

A. The duties we have for each other.

B. The avoiding of emotional reactions.

C. Human growth and happiness.

D. Beliefs that must be held universal for all cultures.

Correct answer:

Question 27: From whom is the next quote?
"If, then, there is some end of the things we do, which we desire for its own sake (everything else being desired for the sake of this), and if we do not chose everything for the sake of something else (for at that rate the process would go on to infinity, so that our desire would be empty and vain), clearly this must be good and the chief good. Will not the knowledge of it, then, have a great influence on life? Shall we not, like archers who have a mark to aim at, be more likely to hit upon what is right?"

A. Aristotle.

B. Kant.

C. Mill.

D. Bentham.

Correct answer: Aristotle.

Question 28: Which of the following is an element of the definition of risk?

A. Acceptability.

B. Duration.

C. Safety.

D. Probability.

Correct answer: Probability.

Question 29: Which of the following is an example of Problem of Paralysis when we look at the acceptability of risks?

A. An individual agrees to pay 100 Euros less for a car, knowing that this car will be somewhat less safe than the more expensive car.

B. An individual chooses not to go skydiving, because she wants to avoid the risk.

C. An individual refuses to agree with exposure to the risk of crashing airplanes and persists that continuing with aviation is morally wrong.

D. An individual refuses to agree with participation in a research for an experimental cure.

Correct answer: An individual refuses to agree to the risk of crashing airplanes and persists that continuing with aviation is morally wrong.

Question 30: Which of the following correctly identifies and defines an important kind Code of Conduct that influences engineers?

A. A professional code. That is a code in which conflicts between ethical principles are solved.

B. A professional code. That is a disciplinary code in which juridical and professional rules are complied.

C. A corporate code. That is a code made by a company to identify her core values and to improve this core values among the employees.

D. A corporate code. That is a code written by a person that strives to achieve certain ideals and virtues.

Correct answer: A corporate code. That is a code made by a company to identify her core values and to improve this core values among the employees.

Question 31: What is the function of an aspirational code in an occupational group?

A. This code formulates the ideals that are deemed to be worth striving for in the occupational group.

B. The code acts as a base for disciplinary measures within the occupational group.

C. This code gives guidelines for acting as professionals.

D. This code prevents abuse in the professional practice.

Correct answer: This code formulates the ideals that are deemed to be worth striving for in the occupational group.

Question 32: Which of the following conditions must be met for a person to have "backward-looking" moral responsibility, when there is a bad outcome?

A. He acted for his own advantage.

B. He acted against a legal obligation.

C. He acted infringing.

D. He chose to achieve the outcome by himself, and not in the framework of a organization or company.

Correct answer: He acted infringing.

Question 33: The problem of many hands has which of the following defining characteristics?

A. An organization can be reasonably morally held responsible for a bad outcome, although none of the individuals can be morally held responsible for the outcome.

B. Many different people are each fully morally responsible for a bad event that occurred.

C. Forward-looking responsibilities are reasonably divided under different people in a organization.

D. Forward-looking responsibility is emphasized, whereas the liability for a bad event that occurred is being neglected.

Correct answer: An organization can be reasonably morally held responsible for a bad outcome, although none of the individuals can be morally held responsible for the outcome.

Question 34: Suppose a company is organized in such a way that the leader of a large design team takes full responsibility for the safety on behalf of the team. How can this best be described?

A. As a bureaucratic model of allocation of responsibility.

B. As a collective model of allocation of responsibility.

C. As a hierarchic model of allocation of responsibility.

D. As an individual model of allocation of responsibility.

Correct answer: As a hierarchic model of allocation of responsibility.

Statements

Question 35: The theory of technological mediation says that technologies do not have any effect on the perception of the users, because users are autonomous.

A. True

B. False

Correct answer: False

Question 36: The theory of technological mediation says that technological artifacts could contain scripts that prescribe users certain actions.

A. True

B. False

Correct answer: True

Question 37: According to Aristotle, moral virtue can be achieved by the execution of just one good deed.

A. True

B. False

Correct answer: False

Question 38: According to utilitarianism, pleasure has an instrumental value, but no intrinsic value.

A. True

B. False

Correct answer: False

Question 39: A person that willfully copies her assignment from a classmate can, without contradiction, universalize her maxim of action.

    A. True

    B. False

Correct answer: False

Question 40: The statement "It is wrong to develop cars from which you know that it is very likely that they will hurt their users" is an example of a norm.

    A. True

    B. False

Correct answer: True

Question 41: According to utilitarianism, everyone's happiness counts equally.

    A. True

    B. False

Correct answer: True

Question 42: Ethical theories attempt to systematize our judgments about whether something is good or bad.

    A. True

    B. False

Correct answer: True

Question 43: Standardization of risks leads to a situation in which the total risk is optimally reduced.

    A. True

    B. False

Correct answer: False

Question 44: Care ethics is an ethical approach that emphasizes individual happiness.

    A. True

    B. False

Correct answer: False

Two ways to take USE considerations into the innovation process: technocracy and participation

Question 45: During The Age of Technocracy, politicians, companies and engineers had a technocratic approach to USE challenges.
What did this model mean for engineers?

    A. They should develop technologies that do **NOT** involve USE problems.

    B. They should use science and technology to solve technical difficulties.

    C. They should deal with USE problems by using scientific methods.

    D. They should **NOT** deal with USE problems.

Correct answer: They should deal with USE problems by using scientific methods.

Question 46: Nowadays scientists and engineers say that engineers have to work together in multidisciplinary teams with other scientists, like doctors, psychologists, geographers and ethicists to solve the Engineering's Grand Challenges.
This is an example of:

    A. a mix of technocratic and participative approaches concerning USE and engineering.

    B. a participative approach concerning USE and engineering.

    C. a technocratic approach concerning USE and engineering.

    D. neither a technocratic nor a participative approach concerning USE and engineering.

Correct answer: a technocratic approach concerning USE and engineering.

Question 47: The development of the point contact and layer transistors at Philips illustrates one of the most important challenges for companies in the age of technocracy that are based on science.
What is this most important challenge?

    A. To coordinate research activities from central laboratories and other departments.

    B. To hire enough scientists and engineers in the field of solid state physics.

    C. To generate sufficient profit for large investments in Research & Development.

    D. To obtain a patent for a new production process as fast as possible.

Correct answer: To coordinate research activities from central laboratories and other departments.

Question 48: In the reader *Engineers in a changing world*, Hendrik Casimir, the director of the Philips research lab from 1957 until 1972, described the relation between physics and electric & electronic products as a process with six essential research steps.

Why can we regard Hendrik Casimir as a true representative of the technocratic way of innovation?

  A. Because he followed the ideas of Vannevar Bush in emphasizing the importance of government support for scientific research.

  B. Because under his leadership NatLab of Philips was reorganized according to these six research steps.

  C. Because his description of the six research steps is an example of the linear model of innovation.

  D. Because his research model was based on a combination of public and private investments in Research & Development.

Correct answer: Because his description of the six research steps is an example of the linear model of innovation.

Question 49: During The Age of Technocracy, modernist architects thought of users as idealized residents, who should act and live as modern citizens.

In what way did home economists react on this view?

  A. By advising residents to pay no rent for impractical houses.

  B. By organizing countercheck, based on knowledge gathered among residents.

  C. By tearing down walls and turning kitchens into multi-purpose living rooms.

  D. By making a formal protest to the Ministry of Social Affairs on behalf of residents.

Correct answer: By organizing countercheck, based on knowledge gathered among residents.

Question 50: During The Age of Participation, users were against existing power relations and supported the idea of 'Appropriate Technology'.

In what way is 'Appropriate Technology' described?
As an innovation that:

  A. is paid for by society to guarantee access for all users.

  B. users create to be part of their environment in an environmentally friendly way.

  C. engineers designed with the actual wishes of users in mind.

  D. entrepreneurs developed by meeting with what users need.

Correct answer: users create to be part of their environment in an environmentally friendly way.

Question 51: During The Age of Participation users received more space to take part in technological development. One way of participation, namely 'participation by delegation' arose from neoliberal ideas.

What is the most important neoliberal idea behind 'participation by delegation'?

  A. The government gives best performance when responsibilities are transferred to companies, citizens and social organizations.

  B. By voting, individual users share their view with political parties, who are responsible for rules and choices for technology.

  C. Technological developments benefit most from a system in which decision-making is transferred to market forces.

  D. Different groups of users should pursue their needs en thus take part in social discussions about technological developments.

Correct answer: The government gives best performance when responsibilities are transferred to companies, citizens and social organizations.

Question 52: During The Age of Participation the process of consultation by the Dutch government about nuclear energy illustrated:

  A. a participation-by-delegation approach.

  B. a participation-by-invitation approach.

  C. a participation-by-protest approach.

  D. a participation-by-users approach.

Correct answer: a participation-by-invitation approach.

Question 53: What is an example of participation-by-delegation?

  A. The foundation of the Rathenau institute (originally named: the Netherlands Organization of Technology Assessment)

  B. The privatization of the Dutch State Mines

  C. The Strategic Niche Management approaches

  D. The World Wide Views on Global Warming conference

Correct answer: The privatization of the Dutch State Mines

Statements

Question 54: In The Age of Technocracy, technical experts claimed they had better solutions than chemists, who they accused of developing chemical weapons that were responsible for the disasters during The Age of Crisis.

A. True

B. False

Correct answer: False

Question 55: The development and failure of Lysine by DSM is an illustration of a technocratic innovation process.

A. True

B. False

Correct answer: True

Question 56: User-centered design is an example of a participative way to organize commercial innovation.

A. True

B. False

Correct answer: True

Question 57: During The Age of Technocracy, companies used consumer research, based on experiental knowledge, workers' and consumers' organizations to gain insight into marketing opportunities.

A. True

B. False

Correct answer: False

Question 58: Due to The Age of Technocracy, there was a significant increase in the number of cities focused on cars.

A. True

B. False

Correct answer: True

Question 59: During The Age of Participation, users had confidence in the expertise of experts.

A. True

B. False

Correct answer: False

General Questions

Question 60: During The Age of Participation the dynamics of User, Society, Enterprise created the modern engineering profession and modern engineering education.
What was according to the reader *Engineering in a Changing World* one of the biggest issues in the education of engineers?
The question whether engineering education

A. should offer solutions for social problems.

B. should aim on companies and users.

C. should aim on science and practice.

D. should be value-free or not.

Correct answer: should aim on science and practice.

Question 61: During The Age of Crisis, it was said that an engineer *"cares nothing for beauty and [...] fills our cities with noise and ugliness"* (cited from *Engineers in a Changing World*, p.69).
Which of the following interpretations would be right according to the reader *Engineers in a Changing World*?

A. Engineers had become technocratic an neglected USE questions.

B. Engineers had become technocratic and lacked sensitivity for their environment.

C. Engineers were held responsible for the disasters of the Second World War and problems in developing countries.

D. Engineers were held responsible for all the problems of their time while being asked to come up with solutions.

Correct answer: Engineers were held responsible for all the problems of their time while being asked to come up with solutions.

Question 62: The Age of Crisis marked the emergence of communist and fascist dictatorships. In what way the 1930s characterized according to the reader *Engineers in a Changing World*?

A. The ideal of technocracy didn't exist yet.

B. Technocracy was a means to counteract the threat of Nazi, fascist and communist regimes.

C. Technocracy was characteristic for democratic, Nazi, fascist and communist systems.

D. Technology and engineering are value-free, they don't support dictatorships and also don't counteract them.

Correct answer: Technocracy was characteristic for democratic, Nazi, fascist and communist systems.

Question 63: According to the reader *Engineers in a Changing World*, Lilian Gilbreth solved one of the most important enterprise nightmares: conflict.

A. True

B. False

Correct answer: True

Multiple choice questions and statements related to CASE study

Read the following article from the *Los Angeles Times* and answer the questions.

California isn't ready for driverless cars [1]

The car of the future isn't quite ready for the present. At least not in California.
A state law passed in 2012 legalized "autonomous vehicles" - otherwise known as driverless cars - and allowed their makers to test them on public roads. The law also directed the state Department of Motor Vehicles (DMV) to develop - by Jan. 1, 2015 - regulations and protocols to certify that the cars are safe before they are widely operated or sold to the public. But it now appears the DMV will miss that deadline.

DMV officials have found that it's not easy to develop regulations for a brand-new technology. Autonomous vehicles use GPS and other navigation systems to get from point A to point B, and the cars have sensors to detect and react to situations on the road. The DMV finalized rules for testing driverless cars only in September, and since then seven companies, including Google, Mercedes-Benz and Nissan, have received permits to take their autonomous autos on the road on a trial basis. For safety reasons, the companies are required to have certified personnel in the driver's seat ready to take control at any time. As it prepares to write rules for wider use, the DMV has to grapple with more difficult questions. Should autonomous cars be allowed on the road with no one

in them capable of taking the wheel - empty, perhaps, or with passengers in the back seat drinking or watching a movie? Should the vehicles be required to have steering wheels and pedals, or will a "stop" button suffice? In theory, driverless cars could significantly reduce the number of collisions, as 90% of accidents are caused by human error. (The Google car won't text and drive, for example.) What happens, however, if the car malfunctions or causes an accident? Would the carmaker be liable? Would the passenger be liable, even if he or she didn't operate the vehicle?

Driverless cars could reshape how Californians live, work and travel, yet there hasn't been much discussion of what the new world will look like.

There are larger questions, too, about how driverless cars will affect the transportation landscape. The vehicles could allow greater mobility for the elderly and the disabled, who may not drive or have access to mass transit. But they may also have a big impact on how California spends its transportation dollars. There might be renewed demand to build more road lanes to accommodate driverless cars, and less demand to build public transit. Driverless cars could affect development patterns, making far-flung suburbs more attractive for commuters who could nap or work while being whisked to the office in their private vehicles. Whether they slow California's effort to fight climate change, or provide a greener driving alternative, will depend on how the vehicles are built and operated.

Driverless cars could reshape how Californians live, work and travel, yet there hasn't been much discussion of what the new world will look like. So, if the DMV needs more time to work out the logistics of getting autonomous cars on the roads, that's just fine. California still has a lot more work to do before driverless cars should leave the garage.

[1] The Editorial Board, "California isn't ready for driverless cars", Los Angeles Times, December 28, 2014

Question 64: Of which type of users are elderly and disabled people an example?

A. Professional users

B. Projected users

C. User-activists

D. User-consumers

Correct answer: Projected users

Question 65: Let's assume that the self-driving car will result in a *"renewed demand to build more road lanes to accommodate driverless cars"* and the state of California invites private road construction companies to take part in the public tender to decide which company may build the roads and exploit them by levying toll.
In what way can you characterize such a development?

A. As participation-by-delegation

B. As participation-by-invitation

C. As participation-by-privatization

D. As participation-by-protest

Correct answer: As participation-by-delegation

Question 66: Why would biketivists object if the introduction of self-driving cars would bring substantial suburbanization?

A. It could reduce the demand for public transport to the central city.

B. It could put pressure on the nature reserves around the city.

C. It could strengthen the car-based character of cities.

D. It could threaten traffic calming measures.

Correct answer: It could strengthen the car-based character of cities.

Question 67: Above text raises the question: "Should autonomous cars be allowed on the road with no one in them capable of taking the wheel?"
Suppose that these cars are actually designed in such a way that there never needs to be someone in the car who is capable of taking the wheel. Which of the following is a script that could be build in these autonomous cars (here we use the concept "script" of the ethics of technological mediation)

A. The driver should carefully keep an eye on the behavior of the car on the road.

B. There should be a difference in role responsibilities of the driver and of the passenger.

C. People should live in the neighborhood of their work.

D. People should have the possibility to feel safe during the ride, so they can work or send text messages.

Correct answer: People should have the possibility to feel safe during the ride, so they can work or send text messages.

Question 68: The author suggests that it is still unclear what a world with cars without drivers would look like, and that cars without drivers raise certain problems. He concludes that "California still has a lot more work to do before driverless cars should leave the garage."
Which of the following principles is closest to the position the author takes while giving this argument?

A. The principle of informed consent

B. The expected utility principle

C. The harm principle

D. The precautionary principle

Correct answer: The precautionary principle

Question 69: The above text states that "Whether [driverless cars] slow California's effort to fight climate change, or provide a greener driving alternative, will depend on how the vehicles are built and operated."
In what way would utilitarianism evaluate the importance of climate change with respect to the comfort of users and passengers?

A. It considers the well-being of they who suffer because of climate change as important as the well-being of the passengers.

B. It evaluates this based on what buyers and other users of such cars would choose autonomously.

C. It examines whether the vehicle is designed in such a way that it probably will treat people in the future with respect.

D. It tries to prevent the worst result possible (the "nightmare scenario" of climate change), even if this result is extremely unlikely.

Correct answer: It considers the well-being of they who suffer because of climate change as important as the well-being of the passengers.

Question 70: Above text wonders whether the car manufacturer can be held responsible if the card doesn't work properly or causes an accident.
Which of the following is the best applicable concept when answering this question?

A. Calculating the expected utility

B. Informed consent

C. Technological mediation

D. Passive responsibility

Correct answer: Passive responsibility

Question 71: Suppose the Union of Concerned Cyclists of California (UCCC) makes a statement, in which they demand that external airbags should be mandatory for autonomous cars to protect cyclists in a collision. Otherwise, these cyclists would be exposed to a higher risk than other road users. However, the Department of Motor Vehicles won't accept this recommendation because of the extremely high costs for buyers of these cars, and argues that it would be better to spend the money on other precautions, because that will lower the total risk more.
Which of the following moral principles seems to be broken by the Department of Motor Vehicles?

A. Aristotle's principle of rational action

B. The utility principle

C. The technocratic principle

D. Kant's universality principle

Correct answer: Kant's universality principle

Statements

Question 72: The role of the Department of Motor Vehicles to guarantee safety is expression of the idea of state responsibility for public interest.
Statemen":
This idea first rose in The Age of Promise, when 'the minimal state' transformed into 'the infrastructure state'.

    A. True

    B. False

Correct answer: True

Question 73: The description of the introduction of self-driving cars fits well in The Age of Participation because many companies participate in the development of this technology.

    A. True

    B. False

Correct answer: False

Question 74: If the introduction of self-driving cars reduces the amount of collisions then we can consider this as a societal dream.

    A. True

    B. False

Correct answer: True