University of Rajshahi

Department of Computer Science and Engineering

B. Sc. (Engg.) Part-III Odd Semester Examination 2023

Course: CSE-3151 (Engineering Ethics and Environment Protection)

Full Marks: 35 Duration: 02 Hours

Answer 04 (Four) questions taking any 02 (Two) from each section

Section-A

1. a) What is engineering ethics? 1.75
   b) List and explain the skills required to handle moral problems/issues in engineering ethics. 4
   c) Explain the term, 'moral dilemma'. What are the situations when moral dilemmas arise? 3

2. a) What is a profession and what are its key features? How does engineering fill out those key features? 3
   b) What is an engineer's obligation to sound the alarm? What are the two specific ways an engineer may sound the alarm? 3.75
   c) What is a code of ethics? Who do codes of ethics apply to? 2

3. a) What is the Moral Control Dilemma? How does it relate to the standard Control Dilemma? 2
   b) What is Induced Demand? How does it relate to the Rebound Effect? And how to both relate to Technological Mediation. 3
   c) What are the four elements of a Mediation Analysis? Illustrate each one with an example. 3.75

Section-B

4. a) What does it mean for technology to be value laden? How does that compare to the idea of technology as value neutral? 2
   b) In the context of engineering and technology, what is a Stakeholder? What is the difference between Indirect and Direct Stakeholders? Write an example of each one. 3
   c) What are Design Requirements? How do they relate to Design Principles? What is an example of a Design Requirement? 3.75

5. a) What is experimental technology? What are the 2 key features of experimental technologies? What are the three principles of engineering ethics generally applied to experimental technology? 2.75
   b) What does the principle of autonomy focus on? What values does it direct us to focus on and how does it tell us to think about technology? 3
   c) What does the principle of fairness focus on? What values does it direct us to focus on and how does it tell us to think about technology? 3

6. a) What are some of the competing criteria for establishing when an environment is sufficiently clean? 2.75
   b) What is Cradle-to-Cradle Thinking? How does it relate to the idea of biomimicry? 2
   c) What is the debate between ecomodernists and degrowth theorists about? How does the Jevons Paradox fit into their debate? 4

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Department of Computer Science and Engineering

B. Sc. (Engg.) Part-3 Odd Semester Examination-2022

Course: CSE-3151 (Engineering Ethics and Environment Protection)

Full Marks: 35 Duration: 02 Hours

[Answer any 02 (Two) questions from each section]

Section-A

1. a) What is ethics? What question does it aim to help us answer? 1.75
   b) What are the four key drivers of ethical decision-making? Discuss each one briefly. 4
   c) What is engineering ethics about? How does it relate to technology ethics? What are some of the key questions each of these fields focuses on? 3

2. a) What is a profession and what are its key features? How does engineering fill out those key features? 3
   b) What is the distinction between responsibility to think and responsibility to act? How does it relate to the distinction between action-oriented obligations and reasoning requirements? 3.75
   c) What is code of ethics? Who do codes of ethics apply to? 2

3. a) What does it mean for engineering and technology to function in a social context? 2
   b) Give two examples of engineering/technology functioning in a social context. 2
   c) What are the three main forms of mediation? Construct your own example of each. 4.75

Section-B

4. a) What does it mean for technology to be value laden? How does that compare to the idea of technology as value neutral? 2
   b) In the context of engineering and technology, what is a Stakeholder? What is the difference between Indirect and Direct Stakeholders? Write an example of each one. 3
   c) What are Design Principles? How do they relate to values? What is an example of a Design Principle? 3.75

5. a) What are the three principles of engineering ethics generally applied to experimental technology? What does it mean for the principles of engineering ethics to function as ethical design constraints? 3
   b) What does the principle of welfare focus on? What values does it direct us to focus on and how does it tell us to think about technology? 3
   c) What are the various "levels" of analysis that the principles can be applied to? What are some questions that we might ask at each level? 2.75

6. a) What are some of the major risks and opportunities associated with Artificial Intelligence? 4.75
   b) What does it mean for a social problem to exhibit a high degree of Coordination Complexity? How might AI help to deal with such a problem? 3
   a) What is a Decide-to-Delegate Model? 1