Foundations of Information Security

CSE 561

EXAM 1

September 28, 2021

FIRST THINGS FIRST, PUT YOUR NAME IN THE UPPER RIGHT-HAND CORNER

This exam will be offered via the campus service CANVAS. It is a bit of a learning experience for me. In particular I am not sure just how it will handle unanswered questions. There are 23 questions presented in this examination. Please answer only 20 of these questions and clearly indicate which questions you do NOT want graded. In these questions you enter NA in the answer field.

1.. Why can you not fully trust and code that you haven’t written yourself?

2. Schell defined threat in terms of four levels of computer misuse, three of which are: Theft of computational resources, Disruption of computational services, Unauthorized information modification and one more. What is the fourth level of computer misuse?

3. Schell and Schneier both address the notion of threat. They come at the question very differently. How do each describe their vision of threat.?

4. What are the four parts of a threat?

5. What is the difference between privacy and anonymity?

6. What are some of the hazards to information assets?

7. What are three factors that affect the ability to prosecute cyber-crime?

.8. What legal purpose is served by following “best practices” in computer security?

9. What are the four main components that constitute THREAT?

10. What is the formula for risk we are using in this class?

11 What is the specific descriptions of the three elements of the CIA triad?

12. . What is the singular differentiator that distinguishes cyber security engineering from all other engineering disciplines?

13. Considering the answer to question10, What is about the digital / computer / cyber context that makes determining a meaningful quantitate value for Risk so difficult?

14. We have looked very closely to the use of the word "secure" in the cyber security context. What have we concluded is wrong with the conventional

use of the word and how do we recommend changing the use of the term?

15. According to "Secrets and Lies" Schneier asserts that physical threats mirror those in cyber space, but the attack characteristics are different. He further asserts that cyber space has three distinct attack characteristics not shared with the physical threats. One of which is: Automation. What are the other two characteristics? In a few words please explain what Schneier has in mind.

16. As this is a course on the foundations of information security, naturally our focus is centered on information. The concept of information has existed since the beginning of civilization, and in fact, it’s not farfetched to say that modern civilizations today have being built on a foundation of deep-rooted and categorically distinct information sets that have contributed to the growth and development of cultures, science and technology. Yet, the one thing that still stands ambiguous is the proper definition of information. What is the definition of information given by Shannon that we use and is considered to be the closest proper definition?

17. Within preliterate communities, how was sacred confidential information, protected? What is one big problem with this traditional solution?

18. The intention of the bag guy has no practical limitations. However, the whole broad spectrum of the bad guy intentions can be more of less rolled up into one short phrase. What is that phrase?

19. . This course advances the idea of an Information Domain. Define and describe an Information Domain and explain why it is so important.

20 What is the fundamental task of the cyber security engineer?

21.: What is the notion of attack surface and how can you quantify an attack surface?

22. Can you make that case that DEEPFAKES are a violation of one or more of the three principles of information security

22. A widely held belief is that cyber criminals need more skill than their traditional counterparts. However, another school of thought believes that exactly the opposite is true. Comment.

23.Why do laws, in particular cyber laws always seem to be so behind the technology?