Cyber Security

CUITM 420

August 2023

Quesition 1

1. Define social engineering and provide examples of four(4) common social engineering techniques [10]
2. Discuss the impact of human factors on cybersecurity and the need for security awareness training

Question 2

You are considering the implementation of BYOD in your organisation. Write a detailed report explaining the security issues and possible solutions that could arise. Include any Cybersecurity tools that you might use as part of your solutions[25]

Question 3

Evaluate the role of incident reporting and incident management in addressing security incidents in a banking institution[25]

Question 4

Elaborate on the need to perform a balanced risk assessment, the techniques that can be used and why this is necessary[25]

Question 5

1. For each of the physical world and the electronic world, provide THREE(3) examples of the following:
2. Weak security mechanisms that, when adopted together, represent a fairly strong security mechanism[3]
3. A strong security mechanism that, when used incorrectly, becomes a weak security mechanism[4]
4. Discuss three(3) common network attacks[9]
5. Explain how the common network attacks you have mentioned in (b) can compromise network security[9]

Question 6

1. Using the Vigenere Cipher, encrypt plain text “TO BE OR NOT TO BE THAT IS THE QUESTION” using the key “RELATIONS” [15]
2. Using the Vigenere Cipher, decrypt cipher text “HHWKSW XSLGNT CG” using the key “PASCAL” [10]

April 2023

Question 1

Discuss the security issues and possible solutions that could arise with the implementation of smart homes[25]

Question 2

1. You analyse an image of a hard drive to locate deleted RAR files . You complete your analysis and do not find any deleted RAR files . Your boss tells you not to write a report. Discribe what you would do and why [15]
2. Name three types of software vulnerability, give an example for each and an explanation of how each could be exploited [15]

Question 3

Elaborate on the need to perform a balanced risk assessment, the techniques that can be used and why this is necessary [25]

Question 4

You are considering the implementation of BYOD in your organisation.Write a detailed report explaining the security issues and posssible solutions that could arise.Include any cybersecurity tools that you might use as part of your solutions [25]

Question 5

Information security models provide a way to formalize security policies. State the information security model(s) you would use in an academic institution and explain why you would use the one you have stated [25]

Question 6

Using the Vigenere Cipher, encrypt plain text “TO BE OR NOT TO BE THAT IS THE QUESTION” using the key “RELATIONS” [15]

Using the Vigenere Cipher, decrypt cipher text “HHWKSW XSLGNT CG” using the key “PASCAL” [10]

May 2023

Question 1

With the aid of a diagram, explain how you would classify data in a private organisation. [25]

Question 2

1. Evaluate the primary types of intrusion detection systems that can be used for an academic institution [16]
2. Expand on the differences between providing confidentiality through cyptography, steganography, and access control mechanisms [9]

Question 3

Elaborate on the need to perform a balanced risk assessment, the techniques that can be used and why this is necessary [25]

Question 4

1. For each of the physical world and the electronic world, provide THREE(3) examples of the following:
2. Weak security mechanisms that, when adopted together represent a fairly strong security mechanism [3]
3. A strong security mechanism that , when used incorrectly, becomes a weak security mechanism [3]
4. A strong security mechanism that, when used without an appropriate security infrastrucutre, becomes a weak security mechanism [3]
5. Using the Vigenere Cipher, encrypt plain text “WE ARE THE BEST” using the key “HEAVEN” [10]
6. Write the steps to show how you would use Steganography to send the key in part(b) to your friend via email [6]

Question 5

To protect her interview partners , a journalist needs to ensure that what she records with her digital camera cannot be viewed by anyone before she returns to her home country.You were asked to design for her a camera that encypts recordings immediately before they are stored on tape. The question arises, how to handle the encyption key. If it is stored in the camera, it could be extracted if the hardware were confiscated and analysed.A key memorised by the user might be obtained using coercion, so this is not a suitable solution either

Suggest alternative convenient ways of arranging the encryption inside the camera such that decryption of the tape is only possible on the journalist’s home computer [25]

Question 6

You are considering the implementation of BYOD in your organisation. Write a detailed report explaining the security issues and possible solutions that could arise. Include any cybersecurity tools that you might use as part of your solutions [25]