Kingdom of Saudi Arabia
Ministry of Education
Imam Mohammed bin Saud Islamic University
Applied College
Cybersecurity program
Cybersecurity Design Principles

Midterm#1

Name:……. ID:……. Section#:324

Q1: Choose the correct answer: 5 points

#	1	2	3	4	5	6	7	8	9	10
Answer										

1) It is a principle help to reduce complexity:
   A) Modular design.
   B) Connection.
   C) Encapsulation.
   D) All the above.

2) The component is:
   A) The degree to which the security behavior of the component is demonstrably compliant with its stated functionality.
   B) The degree to which the user or a component depends on the trustworthiness of another component.
   C) It is any part of a system that, by itself, provides all or a portion of the total functionality required of a system.
   D) None of the above

3) We "Remove unnecessary interfaces and functionality" to achieve:
   A) Modular design.
   B) Simplicity.
   C) Minimization.
   D) Complexity.

4) In modular design the goal is to have each component meet conditions are:
   A) Easy to attack.
   B) Public.
   C) Multi-purpose.
   D) None of above.

5) Designed to be used primarily for large systems and considered less effective unless used on a large scale it is one of disadvantages of:
   A) Modular design.
   B) Simplicity.
   C) Minimization.
   D) Complexity.

6) The _____increases security costs and risk:
   A) Modular design.
   B) Simplicity.
   C) Minimization.
   D) Complexity.

7) Advantages of modular design:
   A) High flexibility of the overall system.
   B) Individual modules are highly reusable.
   C) Bugs are less frequent and easier to detect.
   D) All of the above.

8) Coupling is:
   A) The degree to which the user or a component depends on the trustworthiness of another component.
   B) The degree to which the security behavior of the component is demonstrably compliant with its stated functionality.
   C) The degree with which a component depends on other components in the system.
   D) None of the above.

All the best

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9) What is the meaning of Simplicity?
   A) Simplifying the task of managing security.
   B) Easy to use or understand.
   C) The state of being simple, uncomplicated.
   D) All of the above.

10) The simplicity contributes to cybersecurity by:
   A) Bugs are less frequent and easier to detect.
   B) The simplicity allows system designers and programmers to identify unwanted access paths.
   C) Users can easily translate their general protection goals to appropriate system security configurations.
   D) B,C.

Q2: Match the correct answer from column A to column B: 3 points

#	A	The answer	B
1	It makes vulnerabilities harder to fix once we find them	6	Choke point
2	All unnecessary services off by default.	3	Advantages of Modular Design
3	Individual modules are highly reusable	5	Elements of Modular design
4	It is the internal glue that keeps the module together	1	Disadvantages of complexity in security
5	Purpose, encapsulation, interface, etc	4	Cohesion
6	It is a centralized piece of code through which control must pass	2	Hardening a system

Q3: Put (T) for correct sentences and (F) for wrong sentences: 5 points

1) Without modular design, complexity will destroy productivity. (T)
2) The independence of a module in modular design can be measured using simplicity. (F)
3) Using a modular approach to security design is a good way to gain an understanding of the types of solutions that must be selected to implement security defense in depth. (T)
4) The key is to keep the software as simple as possible to maintain software security. (T)
5) Cohesion is a technique for "packaging the information inside a component". (F)
6) Low coupling between modules is better than high or tight coupling. (T)
7) The minimization is to Minimize the size, quantity, and complexity of what is to be protected. (T)
8) The worst enemy of security is complexity. (T)
9) A well-designed modular system minimizes the dependencies between modules. (T)
10) Complexity makes vulnerabilities easier for developers and testers to uncover. (F)

Commented [R.1]: coupling and cohesion

Commented [R.2]: Encapsulation

Commented [R.3]: harder

All the best

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Q4: Answer the following questions:2 points

1) Benefits Of Implementing Modular design.

1. Maintenance.
2. Understandability.
3. Reuse.
4. Correctness.
5. Testing.
6. Scalability.

2) Steps to Improve Simplicity in Security

1. Evaluate What You Need from Multipurpose Security Suites.
2. Increase Clarity and Reduce Complexity with Automation.
3. Intercept Attacks as Quickly as Possible.
4. Keep designs as simple and small as possible.
5. Reduce the number of components used, keeping only those that are essential.
6. To keep software simple and security checks localized, you can take advantage of a concept called a choke point.

All the best