Question 1
Correct
Mark 2.00 out of 2.00
Flag question

What are three potential vulnerabilities related to a hardware sensor? (Choose three.)

Select one or more:

- [x] tampering ✔
- [x] environment manipulation ✔
- [ ] encryption keys
- [x] damage ✔
- [ ] sensitive data
- [ ] clear-text authentication credential

Refer to curriculum topic: 3.1.1
Vulnerabilities related to a hardware sensor itself include environment manipulation, tampering, and damage. Sensitive data, clear-text authentication credentials, and weak or no encryption relate to the potential vulnerabilities of memory within a device.

The correct answers are: damage, tampering, environment manipulation

Question 2
Correct
Mark 2.00 out of 2.00
Flag question

Which type of vulnerability is present when a programmer does not account for the size of the input that a user might enter?

Select one:

- ( ) backdoor installation
- ( ) out of date firmware
- (•) buffer overflow ✔
- ( ) denial of service

Refer to curriculum topic: 3.2.2
An IoT device using vulnerable software can experience a buffer overflow attack. If a programmer has not accounted for the amount of the input that a user might enter, a threat actor could cause data to be corrupted, execute a denial of service, or run malicious code on the target system.

The correct answer is: buffer overflow

Question **3**

Correct

Mark 2.00 out of 2.00

Flag question

Which type of attack takes advantage of vulnerabilities in servers to grant unauthorized users higher than approved levels of access?

Select one:

- default login
- buffer overflow
- privilege escalation ✔
- backdoor installation

Refer to curriculum topic: 3.3.1
Privilege escalation is an exploit where vulnerabilities in servers or access control systems are exploited to grant unauthorized users higher levels of privilege than they should have. After the privilege is granted, a threat actor can access sensitive information or take control of a system.

The correct answer is: privilege escalation

Question **4**

Correct

Mark 2.00 out of 2.00

Flag question

Which two scripting languages are designed to be executed directly under an operating system? (Choose two.)

Select one or more:

- [ ] Python
- [x] shell script ✔
- [x] PowerShell ✔
- [ ] JavaScript
- [ ] PHP

Refer to curriculum topic: 3.1.2
Linux shell scripts and Windows PowerShell provide scripting capability to perform various tasks directly under the operating system. JavaScript is designed for web browsers. Python and PHP are interpreted languages requiring a proper interpreter to be installed on the operating system.

The correct answers are: shell script, PowerShell

Question **5**

Correct

Mark 2.00 out of 2.00

Flag question

Which interface is used to troubleshoot embedded system software?

Select one:

- I2C
- JTAG ✔
- SPI
- UART

Refer to curriculum topic: 3.1.2
The JTAG port (or interface) on an embedded system provides access to the system for troubleshooting software issues. JTAG is not a communication protocol but rather a protocol to be used for testing and debugging.

The correct answer is: JTAG

Question **6**

Correct

Mark 2.00 out of 2.00

Flag question

What is the function of a data encryption algorithm?

Select one:

- provides data confidentiality by making data unreadable to unauthorized individuals ✔
- authenticates a user by verifying the credentials of the connected user
- securely deletes data to prevent data loss
- authenticates devices by verifying the identity of the device

Refer to curriculum topic: 3.3.2
A data encryption algorithm provides confidentiality by applying an algorithm that makes data unreadable to those who are not authorized to view it. This algorithm can be applied to files or network traffic that contains confidential information.

The correct answer is: provides data confidentiality by making data unreadable to unauthorized individuals

Question 7
Correct
Mark 2.00 out of 2.00
Flag question

What is the result of an attacker rooting an IoT device?

Select one:

- An attacker that gains root access has limited access until the attacker installs backdoor software.
- An attacker that gains root access has complete control over that device. ✔
- An attacker that gains root access will be able to read the memory of that device.
- An attacker that gains root access is limited to local access of that device.

Refer to curriculum topic: 3.2.2
An attacker that successfully roots an operating system can then read, modify, or delete any file on that system.

The correct answer is: An attacker that gains root access has complete control over that device.

Question 8
Correct
Mark 2.00 out of 2.00
Flag question

What is a key difference between an embedded device and a prototyping device?

Select one:

- An embedded device does not contain an operating system, whereas a prototyping device does.
- An embedded device uses removable media to hold the programming code, whereas a prototyping device uses a hard disk to hold the programming code.
- An embedded device is programmed for one specific purpose, whereas a prototyping device is designed to perform different functions. ✔
- An embedded device does not connect to the internet, whereas a prototyping device does.

Refer to curriculum topic: 3.1.1
An embedded device is a product that contains a computing system designed for a special purpose. A prototyping device, such as Raspberry Pi, or Arduino, either needs a complete operating system to operate and be more closely related to a desktop computer or can be configured by writing program code to instruct it do various functions as desired.

The correct answer is: An embedded device is programmed for one specific purpose, whereas a prototyping device is designed to perform different functions.

truction Set Computing architecture? (Choose two.)

question

- [ ] iOS
- [ ] Intel
- [x] ARM
- [ ] Android

Refer to curriculum topic: 3.1.1
CPUs from ARM and MIPS are based on the Reduced Instruction Set Computing architecture. CPUs from Intel and AMD are based on the Complex Instruction Set Computing architecture. Android and iOS are operating systems for mobile devices.

The correct answers are: ARM, MIPS

Question **10**

Correct

Mark 2.00 out of 2.00

Flag question

An administrator wants to implement an access control model that makes access decisions based on the role and responsibilities of an individual within an organization. Which access control model best addresses this requirement?

Select one:

- mandatory
- role-based
- attribute-based
- discretionary

Refer to curriculum topic: 3.3.1
Role-based access control, also known as nondiscretionary, uses access decisions based on the role of individuals and their responsibilities within an organization.

The correct answer is: role-based

Question **11**

Correct

Mark 2.00 out of 2.00

Flag question

Which two pieces of information are needed to search for an IoT device in the FCC ID database? (Choose two.)

Select one or more:

- [x] grantee code ✔
- [ ] IP address
- [x] product code ✔
- [ ] product description
- [ ] product serial number

Refer to curriculum topic: 3.2.1
A known FCC ID is needed in order to search the FCC ID database. The FCC ID is made of two components, a grantee code followed by a product code.

The correct answers are: product code, grantee code

Question **12**

Correct

Mark 2.00 out of 2.00

Flag question

Which type of technology is classified as embedded software that includes a minimal operating system for controlling an IoT device?

Select one:

- ( ) SD card
- ( ) microcontroller
- (•) firmware ✔
- ( ) microprocessor

Refer to curriculum topic: 3.2.2
Firmware is embedded software that contains a minimal operating system and related programs used for controlling an IoT device.

The correct answer is: firmware

Question **13**

Correct

Mark 2.00 out of 2.00

Flag question

Which type of memory media would provide space to store collected data in an IoT device?

Select one:

- EPROM
- SD card ✔
- DRAM
- SRAM

Refer to curriculum topic: 3.1.1
An SD card inserted in an IoT device can be used to store data necessary for IoT operation (for example, the entire operating system and configuration files) or to store collected data. EPROM is read-only media, the contents of which can only be altered through a specific system program. SRAM and DRAM are volatile memory.

The correct answer is: SD card

Question **14**

Correct

Mark 2.00 out of 2.00

Flag question

What are constrained devices as they relate to the IoT?

Select one:

- They are located in a highly secured environment.
- They have very limited power, memory, and processing cycles. ✔
- To reduce possible attacks to a minimum, they have just a few communication interfaces.
- They are designed for use in a very rough environment.

Refer to curriculum topic: 3.1.1
A constrained device usually has very limited power, memory, and processing cycles. The IoT is largely made up of constrained devices, such as smart sensors and embedded devices.

The correct answer is: They have very limited power, memory, and processing cycles.

They are designed for use in a very rough environment.

Refer to curriculum topic: 3.1.1
A constrained device usually has very limited power, memory, and processing cycles. The IoT is largely made up of constrained devices, such as smart sensors and embedded devices.

The correct answer is: They have very limited power, memory, and processing cycles.

Question **15**
Correct
Mark 2.00 out of 2.00
Flag question

Which type of access control model uses access control lists to allow users to control access to their own data?

Select one:

- attribute-based
- mandatory
- role-based
- discretionary ✔

Refer to curriculum topic: 3.3.1
Discretionary access control uses access control lists or other methods to allow users to control access to data that they own.

The correct answer is: discretionary