

# ISC2

## Exam Questions SSCP

System Security Certified Practitioner (SSCP)



### NEW QUESTION 1

- (Topic 1)

Detective/Technical measures:

- A. include intrusion detection systems and automatically-generated violation reports from audit trail information.
- B. do not include intrusion detection systems and automatically-generated violation reports from audit trail information.
- C. include intrusion detection systems but do not include automatically-generated violation reports from audit trail information.
- D. include intrusion detection systems and customised-generated violation reports from audit trail information.

**Answer:** A

#### Explanation:

Detective/Technical measures include intrusion detection systems and automatically-generated violation reports from audit trail information. These reports can indicate variations from "normal" operation or detect known signatures of unauthorized access episodes. In order to limit the amount of audit information flagged and reported by automated violation analysis and reporting mechanisms, clipping levels can be set. Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 35.

### NEW QUESTION 2

- (Topic 1)

Which is the last line of defense in a physical security sense?

- A. people
- B. interior barriers
- C. exterior barriers
- D. perimeter barriers

**Answer:** A

#### Explanation:

"Ultimately, people are the last line of defense for your company's assets" (Pastore & Dulaney, 2006, p. 529).

Pastore, M. and Dulaney, E. (2006). CompTIA Security+ study guide: Exam SY0-101. Indianapolis, IN: Sybex.

### NEW QUESTION 3

- (Topic 1)

Physical security is accomplished through proper facility construction, fire and water protection, anti-theft mechanisms, intrusion detection systems, and security procedures that are adhered to and enforced. Which of the following is not a component that achieves this type of security?

- A. Administrative control mechanisms
- B. Integrity control mechanisms
- C. Technical control mechanisms
- D. Physical control mechanisms

**Answer:** B

#### Explanation:

Integrity Controls Mechanisms are not part of physical security. All of the other detractors were correct this one was the wrong one that does not belong to Physical Security. Below you have more details extracted from the SearchSecurity web site: Information security depends on the security and management of the physical space in which computer systems operate. Domain 9 of the CISSP exam's Common Body of Knowledge addresses the challenges of securing the physical space, its systems and the people who work within it by use of administrative, technical and physical controls. The following QUESTION NO: s are covered:

Facilities management: The administrative processes that govern the maintenance and protection of the physical operations space, from site selection through emergency response.

Risks, issues and protection strategies: Risk identification and the selection of security protection components.

Perimeter security: Typical physical protection controls.

Facilities management

Facilities management is a complex component of corporate security that ranges from the planning of a secure physical site to the management of the physical information system environment. Facilities management responsibilities include site selection and physical security planning (i.e. facility construction, design and layout, fire and water damage protection, antitheft mechanisms, intrusion detection and security procedures.) Protections must extend to both people and assets. The necessary level of protection depends on the value of the assets and data. CISSP® candidates must learn the concept of critical-path analysis as a means of determining a component's business function criticality relative to the cost of operation and replacement. Furthermore, students need to gain an understanding of the optimal location and physical attributes of a secure facility. Among the QUESTION NO: s covered in this domain are site inspection, location, accessibility and obscurity, considering the area crime rate, and the likelihood of natural hazards such as floods or earthquakes.

This domain also covers the quality of construction material, such as its protective qualities and load capabilities, as well as how to lay out the structure to minimize risk of forcible entry and accidental damage. Regulatory compliance is also touched on, as is preferred proximity to civil protection services, such as fire and police stations. Attention is given to computer and equipment rooms, including their location, configuration (entrance/egress requirements) and their proximity to wiring distribution centers at the site.

Physical risks, issues and protection strategies

An overview of physical security risks includes risk of theft, service interruption, physical damage, compromised system integrity and unauthorized disclosure of information. Interruptions to business can manifest due to loss of power, services, telecommunications connectivity and water supply. These can also seriously compromise electronic security monitoring alarm/response devices. Backup options are also covered in this domain, as is a strategy for quantifying the risk exposure by simple formula.

Investment in preventive security can be costly. Appropriate redundancy of people skills, systems and infrastructure must be based on the criticality of the data and assets to be preserved. Therefore a strategy is presented that helps determine the selection of cost appropriate controls. Among the QUESTION NO: s covered in this domain are regulatory and legal requirements, common standard security protections such as locks and fences, and the importance of establishing service level agreements for maintenance and disaster support. Rounding out the optimization approach are simple calculations for determining mean time between failure and mean time to repair (used to estimate average equipment life expectancy) — essential for estimating the cost/benefit of purchasing and maintaining redundant equipment.

As the lifeblood of computer systems, special attention is placed on adequacy, quality and protection of power supplies. CISSP candidates need to understand

power supply concepts and terminology, including those for quality (i.e. transient noise vs. clean power); types of interference (EMI and RFI); and types of interruptions such as power excess by spikes and surges, power loss by fault or blackout, and power degradation from sags and brownouts. A simple formula is presented for determining the total cost per hour for backup power. Proving power reliability through testing is recommended and the advantages of three power protection approaches are discussed (standby UPS, power line conditioners and backup sources) including minimum requirements for primary and alternate power provided.

Environmental controls are explored in this domain, including the value of positive pressure water drains and climate monitoring devices used to control temperature, humidity and reduce static electricity. Optimal temperatures and humidity settings are provided.

Recommendations include strict procedures during emergencies, preventing typical risks (such as blocked fans), and the use of antistatic armbands and hygrometers. Positive pressurization for proper ventilation and monitoring for air born contaminants is stressed.

The pros and cons of several detection response systems are deeply explored in this domain. The concept of combustion, the classes of fire and fire extinguisher ratings are detailed. Mechanisms behind smoke-activated, heat-activated and flame-activated devices and Automatic Dial-up alarms are covered, along with their advantages, costs and shortcomings. Types of fire sources are distinguished and the effectiveness of fire suppression methods for each is included. For instance, Halon and its approved replacements are covered, as are the advantages and the inherent risks to equipment of the use of water sprinklers.

Administrative controls

The physical security domain also deals with administrative controls applied to physical sites and assets. The need for skilled personnel, knowledge sharing between them, separation of duties, and appropriate oversight in the care and maintenance of equipment and environments is stressed. A list of management duties including hiring checks, employee maintenance activities and recommended termination procedures is offered. Emergency measures include accountability for evacuation and system shutdown procedures, integration with disaster and business continuity plans, assuring documented procedures are easily available during different types of emergencies, the scheduling of periodic equipment testing, administrative reviews of documentation, procedures and recovery plans, responsibilities delegation, and personnel training and drills.

Perimeter security

Domain nine also covers the devices and techniques used to control access to a space. These include access control devices, surveillance monitoring, intrusion detection and corrective actions. Specifications are provided for optimal external boundary protection, including fence heights and placement, and lighting placement and types. Selection of door types and lock characteristics are covered. Surveillance methods and intrusion-detection methods are explained, including the use of video monitoring, guards, dogs, proximity detection systems, photoelectric/photometric systems, wave pattern devices, passive infrared systems, and sound and motion detectors, and current flow sensitivity devices that specifically address computer theft. Room lock types — both preset and cipher locks (and their variations) -- device locks, such as portable laptop locks, lockable server bays, switch control locks and slot locks, port controls, peripheral switch controls and cable trap locks are also covered. Personal access control methods used to identify authorized users for site entry are covered at length, noting social engineering risks such as piggybacking. Wireless proximity devices, both user access and system sensing readers are covered (i.e. transponder based, passive devices and field powered devices) in this domain.

Now that you've been introduced to the key concepts of Domain 9, watch the Domain 9, Physical Security video

Return to the CISSP Essentials Security School main page

See all SearchSecurity.com's resources on CISSP certification training Source: HARRIS, Shon, All-In-One CISSP Certification Exam Guide, McGraw-Hill/Osborne, 2001, Page 280.

#### NEW QUESTION 4

- (Topic 1)

Which of the following is implemented through scripts or smart agents that replays the users multiple log-ins against authentication servers to verify a user's identity which permit access to system services?

- A. Single Sign-On
- B. Dynamic Sign-On
- C. Smart cards
- D. Kerberos

**Answer:** A

#### Explanation:

SSO can be implemented by using scripts that replay the users multiple log- ins against authentication servers to verify a user's identity and to permit access to system services.

Single Sign on was the best answer in this case because it would include Kerberos. When you have two good answers within the 4 choices presented you must select the

BEST one. The high level choice is always the best. When one choice would include the other one that would be the best as well.

Reference(s) used for this question:

KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 40.

#### NEW QUESTION 5

- (Topic 1)

Which of the following offers advantages such as the ability to use stronger passwords, easier password administration, one set of credential, and faster resource access?

- A. Smart cards
- B. Single Sign-On (SSO)
- C. Symmetric Ciphers
- D. Public Key Infrastructure (PKI)

**Answer:** B

#### Explanation:

The advantages of SSO include having the ability to use stronger passwords, easier administration as far as changing or deleting the passwords, minimize the risks of orphan accounts, and requiring less time to access resources.

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 39.

#### NEW QUESTION 6

- (Topic 1)

Which of the following is an example of a passive attack?

- A. Denying services to legitimate users
- B. Shoulder surfing

- C. Brute-force password cracking
- D. Smurfing

**Answer: B**

**Explanation:**

Shoulder surfing is a form of a passive attack involving stealing passwords, personal identification numbers or other confidential information by looking over someone's shoulder. All other forms of attack are active attacks, where a threat makes a modification to the system in an attempt to take advantage of a vulnerability.

Source: HARRIS, Shon, All-In-One CISSP Certification Exam Guide, McGraw- Hill/Osborne, 2002, chapter 3: Security Management Practices (page 63).

**NEW QUESTION 7**

- (Topic 1)

Which of the following access control techniques best gives the security officers the ability to specify and enforce enterprise-specific security policies in a way that maps naturally to an organization's structure?

- A. Access control lists
- B. Discretionary access control
- C. Role-based access control
- D. Non-mandatory access control

**Answer: C**

**Explanation:**

Role-based access control (RBAC) gives the security officers the ability to specify and enforce enterprise-specific security policies in a way that maps naturally to an organization's structure. Each user is assigned one or more roles, and each role is assigned one or more privileges that are given to users in that role. An access control list (ACL) is a table that tells a system which access rights each user has to a particular system object. With discretionary access control, administration is decentralized and owners of resources control other users' access. Non-mandatory access control is not a defined access control technique.

Source: ANDRESS, Mandy, Exam Cram CISSP, Coriolis, 2001, Chapter 2: Access Control Systems and Methodology (page 9).

**NEW QUESTION 8**

- (Topic 1)

In the Bell-LaPadula model, the Star-property is also called:

- A. The simple security property
- B. The confidentiality property
- C. The confinement property
- D. The tranquility property

**Answer: B**

**Explanation:**

The Bell-LaPadula model focuses on data confidentiality and access to classified information, in contrast to the Biba Integrity Model which describes rules for the protection of data integrity.

In this formal model, the entities in an information system are divided into subjects and objects.

The notion of a "secure state" is defined, and it is proven that each state transition preserves security by moving from secure state to secure state, thereby proving that the system satisfies the security objectives of the model.

The Bell-LaPadula model is built on the concept of a state machine with a set of allowable states in a system. The transition from one state to another state is defined by transition functions.

A system state is defined to be "secure" if the only permitted access modes of subjects to objects are in accordance with a security policy.

To determine whether a specific access mode is allowed, the clearance of a subject is compared to the classification of the object (more precisely, to the combination of classification and set of compartments, making up the security level) to determine if the subject is authorized for the specific access mode.

The clearance/classification scheme is expressed in terms of a lattice. The model defines two mandatory access control (MAC) rules and one discretionary access control (DAC) rule with three security properties:

The Simple Security Property - a subject at a given security level may not read an object at a higher security level (no read-up).

The property (read "star"-property) - a subject at a given security level must not write to any object at a lower security level (no write-down). The property is also known as the Confinement property.

The Discretionary Security Property - use an access control matrix to specify the discretionary access control.

The transfer of information from a high-sensitivity document to a lower-sensitivity document may happen in the Bell-LaPadula model via the concept of trusted subjects. Trusted Subjects are not restricted by the property. Untrusted subjects are.

Trusted Subjects must be shown to be trustworthy with regard to the security policy. This security model is directed toward access control and is characterized by the phrase: "no read up, no write down." Compare the Biba model, the Clark-Wilson model and the Chinese Wall.

With Bell-LaPadula, users can create content only at or above their own security level (i.e. secret researchers can create secret or top-secret files but may not create public files; no write-down). Conversely, users can view content only at or below their own security level

(i.e. secret researchers can view public or secret files, but may not view top-secret files; no read-up).

**Strong Property**

The Strong Property is an alternative to the Property in which subjects may write to objects with only a matching security level. Thus, the write-up operation permitted in the usual Property is not present, only a write-to-same level operation. The Strong Property is usually discussed in the context of multilevel database management systems and is motivated by integrity concerns.

**Tranquility principle**

The tranquility principle of the Bell-LaPadula model states that the classification of a subject or object does not change while it is being referenced. There are two forms to the tranquility principle: the "principle of strong tranquility" states that security levels do not change during the normal operation of the system and the "principle of weak tranquility" states that security levels do not change in a way that violates the rules of a given security policy.

Another interpretation of the tranquility principles is that they both apply only to the period of time during which an operation involving an object or subject is occurring. That is, the strong tranquility principle means that an object's security level/label will not change during an operation (such as read or write); the weak tranquility principle means that an object's security level/label may change in a way that does not violate the security policy during an operation.

Reference(s) used for this question: [http://en.wikipedia.org/wiki/Biba\\_Model](http://en.wikipedia.org/wiki/Biba_Model)

[http://en.wikipedia.org/wiki/Mandatory\\_access\\_control](http://en.wikipedia.org/wiki/Mandatory_access_control) [http://en.wikipedia.org/wiki/Discretionary\\_access\\_control](http://en.wikipedia.org/wiki/Discretionary_access_control) [http://en.wikipedia.org/wiki/Clark-Wilson\\_model](http://en.wikipedia.org/wiki/Clark-Wilson_model)

[http://en.wikipedia.org/wiki/Brewer\\_and\\_Nash\\_model](http://en.wikipedia.org/wiki/Brewer_and_Nash_model)



#### NEW QUESTION 9

- (Topic 1)

In which of the following model are Subjects and Objects identified and the permissions applied to each subject/object combination are specified. Such a model can be used to quickly summarize what permissions a subject has for various system objects.

- A. Access Control Matrix model
- B. Take-Grant model
- C. Bell-LaPadula model
- D. Biba model

**Answer:** A

#### Explanation:

An access control matrix is a table of subjects and objects indicating what actions individual subjects can take upon individual objects. Matrices are data structures that programmers implement as table lookups that will be used and enforced by the operating system.

This type of access control is usually an attribute of DAC models. The access rights can be assigned directly to the subjects (capabilities) or to the objects (ACLs).

Capability Table

A capability table specifies the access rights a certain subject possesses pertaining to specific objects. A capability table is different from an ACL because the subject is bound to the capability table, whereas the object is bound to the ACL.

Access control lists (ACLs)

ACLs are used in several operating systems, applications, and router configurations. They are lists of subjects that are authorized to access a specific object, and they define what level of authorization is granted. Authorization can be specific to an individual, group, or role. ACLs map values from the access control matrix to the object.

Whereas a capability corresponds to a row in the access control matrix, the ACL corresponds to a column of the matrix.

NOTE: Ensure you are familiar with the terms Capability and ACLs for the purpose of the exam.

Resource(s) used for this question:

Harris, Shon (2012-10-25). CISSP All-in-One Exam Guide, 6th Edition (Kindle Locations 5264-5267). McGraw-Hill. Kindle Edition.

or

Harris, Shon (2012-10-25). CISSP All-in-One Exam Guide, 6th Edition, Page 229 and

Hernandez CISSP, Steven (2012-12-21). Official (ISC)2 Guide to the CISSP CBK, Third Edition ((ISC)2 Press) (Kindle Locations 1923-1925). Auerbach Publications. Kindle Edition.

#### NEW QUESTION 10

- (Topic 1)

What does the (star) property mean in the Bell-LaPadula model?

- A. No write up
- B. No read up
- C. No write down
- D. No read down

**Answer:** C

#### Explanation:

The (star) property of the Bell-LaPadula access control model states that writing of information by a subject at a higher level of sensitivity to an object at a lower level of sensitivity is not permitted (no write down).

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, John Wiley & Sons, 2001, Chapter 5: Security Architectures and Models (page 202).

Also check out: HARRIS, Shon, All-In-One CISSP Certification Exam Guide, McGraw- Hill/Osborne, 2002, Chapter 5: Security Models and Architecture (page 242, 243).

#### NEW QUESTION 10

- (Topic 1)

What is the most critical characteristic of a biometric identifying system?

- A. Perceived intrusiveness
- B. Storage requirements
- C. Accuracy
- D. Scalability

**Answer:** C

#### Explanation:

Accuracy is the most critical characteristic of a biometric identifying verification system.

Accuracy is measured in terms of false rejection rate (FRR, or type I errors) and false acceptance rate (FAR or type II errors).

The Crossover Error Rate (CER) is the point at which the FRR equals the FAR and has become the most important measure of biometric system accuracy.

Source: TIPTON, Harold F. & KRAUSE, Micki, Information Security Management Handbook, 4th edition (volume 1), 2000, CRC Press, Chapter 1, Biometric Identification (page 9).

#### NEW QUESTION 14

- (Topic 1)

Which of the following is NOT a type of motion detector?

- A. Photoelectric sensor
- B. Passive infrared sensors
- C. Microwave Sensor.
- D. Ultrasonic Sensor.

**Answer:** A

**Explanation:**

A photoelectric sensor does not "directly" sense motion there is a narrow beam that won't set off the sensor unless the beam is broken. Photoelectric sensors, along with dry contact switches, are a type of perimeter intrusion detector.

All of the other answers are valid types of motion detectors types.

The content below on the different types of sensors is from Wikipedia: Indoor Sensors

These types of sensors are designed for indoor use. Outdoor use would not be advised due to false alarm vulnerability and weather durability. Passive infrared detectors



C:\Users\MCS\Desktop\1.jpg Passive Infrared Sensor

The passive infrared detector (PIR) is one of the most common detectors found in household and small business environments because it offers affordable and reliable functionality. The term passive means the detector is able to function without the need to generate and radiate its own energy (unlike ultrasonic and microwave volumetric intrusion detectors that are "active" in operation). PIRs are able to distinguish if an infrared emitting object is present by first learning the ambient temperature of the monitored space and then detecting a change in the temperature caused by the presence of an object. Using the principle of differentiation, which is a check of presence or nonpresence, PIRs verify if an intruder or object is actually there. Creating individual zones of detection where each zone comprises one or more layers can achieve differentiation. Between the zones there are areas of no sensitivity (dead zones) that are used by the sensor for comparison.

**Ultrasonic detectors**

Using frequencies between 15 kHz and 75 kHz, these active detectors transmit ultrasonic sound waves that are inaudible to humans. The Doppler shift principle is the underlying method of operation, in which a change in frequency is detected due to object motion. This is caused when a moving object changes the frequency of sound waves around it. Two conditions must occur to successfully detect a Doppler shift event:

There must be motion of an object either towards or away from the receiver.

The motion of the object must cause a change in the ultrasonic frequency to the receiver relative to the transmitting frequency.

The ultrasonic detector operates by the transmitter emitting an ultrasonic signal into the area to be protected. The sound waves are reflected by solid objects (such as the surrounding floor, walls and ceiling) and then detected by the receiver. Because ultrasonic waves are transmitted through air, then hard-surfaced objects tend to reflect most of the ultrasonic energy, while soft surfaces tend to absorb most energy.

When the surfaces are stationary, the frequency of the waves detected by the receiver will be equal to the transmitted frequency. However, a change in frequency will occur as a result of the Doppler principle, when a person or object is moving towards or away from the detector. Such an event initiates an alarm signal. This technology is considered obsolete by many alarm professionals, and is not actively installed.

**Microwave detectors**

This device emits microwaves from a transmitter and detects any reflected microwaves or reduction in beam intensity using a receiver. The transmitter and receiver are usually combined inside a single housing (monostatic) for indoor applications, and separate housings (bistatic) for outdoor applications. To reduce false alarms this type of detector is usually combined with a passive infrared detector or "Dualtec" alarm.

Microwave detectors respond to a Doppler shift in the frequency of the reflected energy, by a phase shift, or by a sudden reduction of the level of received energy. Any of these effects may indicate motion of an intruder.

**Photo-electric beams**

Photoelectric beam systems detect the presence of an intruder by transmitting visible or infrared light beams across an area, where these beams may be obstructed. To improve the detection surface area, the beams are often employed in stacks of two or more. However, if an intruder is aware of the technology's presence, it can be avoided. The technology can be an effective long-range detection system, if installed in stacks of three or more where the transmitters and receivers are staggered to create a fence-like barrier. Systems are available for both internal and external applications. To prevent a clandestine attack using a secondary light source being used to hold the detector in a 'sealed' condition whilst an intruder passes through, most systems use and detect a modulated light source.

**Glass break detectors**

The glass break detector may be used for internal perimeter building protection. When glass breaks it generates sound in a wide band of frequencies. These can range from infrasonic, which is below 20 hertz (Hz) and can not be heard by the human ear, through the audio band from 20 Hz to 20 kHz which humans can hear, right up to ultrasonic, which is above 20 kHz and again cannot be heard. Glass break acoustic detectors are mounted in close proximity to the glass panes and listen for sound frequencies associated with glass breaking. Seismic glass break detectors are different in that they are installed on the glass pane. When glass breaks it produces specific shock frequencies which travel through the glass and often through the window frame and the surrounding walls and ceiling. Typically, the most intense frequencies generated are between 3 and 5 kHz, depending on the type of glass and the presence of a plastic interlayer. Seismic glass break detectors "feel" these shock frequencies and in turn generate an alarm condition.

The more primitive detection method involves gluing a thin strip of conducting foil on the inside of the glass and putting low-power electrical current through it.

Breaking the glass is practically guaranteed to tear the foil and break the circuit.

Smoke, heat, and carbon monoxide detectors



C:\Users\MCS\Desktop\1.jpg Heat Detection System

Most systems may also be equipped with smoke, heat, and/or carbon monoxide detectors. These are also known as 24 hour zones (which are on at all times). Smoke detectors and heat detectors protect from the risk of fire and carbon monoxide detectors protect from the risk of carbon monoxide. Although an intruder alarm panel may also have these detectors connected, it may not meet all the local fire code requirements of a fire alarm system.

Other types of volumetric sensors could be:

Active Infrared

Passive Infrared/Microwave combined Radar

Accoustical Sensor/Audio Vibration Sensor (seismic) Air Turbulence

#### NEW QUESTION 17

- (Topic 1)

Which of the following can best eliminate dial-up access through a Remote Access Server as a hacking vector?

- A. Using a TACACS+ server.
- B. Installing the Remote Access Server outside the firewall and forcing legitimate users to authenticate to the firewall.
- C. Setting modem ring count to at least 5.
- D. Only attaching modems to non-networked hosts.

**Answer: B**

#### Explanation:

Containing the dial-up problem is conceptually easy: by installing the Remote Access Server outside the firewall and forcing legitimate users to authenticate to the firewall, any access to internal resources through the RAS can be filtered as would any other connection coming from the Internet.

The use of a TACACS+ Server by itself cannot eliminate hacking.

Setting a modem ring count to 5 may help in defeating war-dialing hackers who look for modem by dialing long series of numbers.

Attaching modems only to non-networked hosts is not practical and would not prevent these hosts from being hacked.

Source: STREBE, Matthew and PERKINS, Charles, Firewalls 24seven, Sybex 2000, Chapter 2: Hackers.

#### NEW QUESTION 19

- (Topic 1)

What does the Clark-Wilson security model focus on?

- A. Confidentiality
- B. Integrity
- C. Accountability
- D. Availability

**Answer: B**

#### Explanation:

The Clark-Wilson model addresses integrity. It incorporates mechanisms to enforce internal and external consistency, a separation of duty, and a mandatory integrity policy.

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, John Wiley & Sons, 2001, Chapter 5: Security Architectures and Models (page 205).

#### NEW QUESTION 21

- (Topic 1)

The control measures that are intended to reveal the violations of security policy using software and hardware are associated with:

- A. Preventive/physical
- B. Detective/technical
- C. Detective/physical
- D. Detective/administrative

**Answer: B**

#### Explanation:

The detective/technical control measures are intended to reveal the violations of security policy using technical means.

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 35.

#### NEW QUESTION 24

- (Topic 1)

Which access control model enables the OWNER of the resource to specify what subjects can access specific resources based on their identity?

- A. Discretionary Access Control
- B. Mandatory Access Control
- C. Sensitive Access Control
- D. Role-based Access Control

**Answer:** A

**Explanation:**

Data owners decide who has access to resources based only on the identity of the person accessing the resource.

The following answers are incorrect :

Mandatory Access Control : users and data owners do not have as much freedom to determine who can access files. The operating system makes the final decision and can override the users' wishes and access decisions are based on security labels.

Sensitive Access Control : There is no such access control in the context of the above question.

Role-based Access Control : uses a centrally administered set of controls to determine how subjects and objects interact , also called as non discretionary access control.

In a mandatory access control (MAC) model, users and data owners do not have as much freedom to determine who can access files. The operating system makes the final decision and can override the users' wishes. This model is much more structured and strict and is based on a security label system. Users are given a security clearance (secret, top secret, confidential, and so on), and data is classified in the same way. The clearance and classification data is stored in the security labels, which are bound to the specific subjects and objects. When the system makes a decision about fulfilling a request to access an object, it is based on the clearance of the subject, the classification of the object, and the security policy of the system. The rules for how subjects access objects are made by the security officer, configured by the administrator, enforced by the operating system, and supported by security technologies

Reference : Shon Harris , AIO v3 , Chapter-4 : Access Control , Page : 163-165

**NEW QUESTION 27**

- (Topic 1)

Which security model is based on the military classification of data and people with clearances?

- A. Brewer-Nash model
- B. Clark-Wilson model
- C. Bell-LaPadula model
- D. Biba model

**Answer:** C

**Explanation:**

The Bell-LaPadula model is a confidentiality model for information security based on the military classification of data, on people with clearances and data with a classification or sensitivity model. The Biba, Clark-Wilson and Brewer-Nash models are concerned with integrity.

Source: HARE, Chris, Security Architecture and Models, Area 6 CISSP Open Study Guide, January 2002.

**NEW QUESTION 31**

- (Topic 1)

Which of the following is not a physical control for physical security?

- A. lighting
- B. fences
- C. training
- D. facility construction materials

**Answer:** C

**Explanation:**

Some physical controls include fences, lights, locks, and facility construction materials. Some administrative controls include facility selection and construction, facility management, personnel controls, training, and emergency response and procedures.

From: HARRIS, Shon, All-In-One CISSP Certification Exam Guide, McGraw-Hill/Osborne, 3rd. Ed., Chapter 6, page 403.

**NEW QUESTION 32**

- (Topic 1)

The three classic ways of authenticating yourself to the computer security software are by something you know, by something you have, and by something:

- A. you need.
- B. non-trivial
- C. you are.
- D. you can get.

**Answer:** C

**Explanation:**

This is more commonly known as biometrics and is one of the most accurate ways to authenticate an individual.

The rest of the answers are incorrect because they not one of the three recognized forms for Authentication.

**NEW QUESTION 37**

- (Topic 1)

Which of the following control pairings include: organizational policies and procedures, pre- employment background checks, strict hiring practices, employment agreements, employee termination procedures, vacation scheduling, labeling of sensitive materials, increased supervision, security awareness training, behavior awareness, and sign-up procedures to obtain access to information systems and networks?



- A. Preventive/Administrative Pairing
- B. Preventive/Technical Pairing
- C. Preventive/Physical Pairing
- D. Detective/Administrative Pairing

**Answer:** A

**Explanation:**

The Answer: Preventive/Administrative Pairing: These mechanisms include organizational policies and procedures, pre-employment background checks, strict hiring practices, employment agreements, friendly and unfriendly employee termination procedures, vacation scheduling, labeling of sensitive materials, increased supervision, security awareness training, behavior awareness, and sign-up procedures to obtain access to information systems and networks.

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 34.

**NEW QUESTION 42**

- (Topic 1)

Which TCSEC class specifies discretionary protection?

- A. B2
- B. B1
- C. C2
- D. C1

**Answer:** D

**Explanation:**

C1 involves discretionary protection, C2 involves controlled access protection, B1 involves labeled security protection and B2 involves structured protection.

Source: TIPTON, Hal, (ISC)2, Introduction to the CISSP Exam presentation.

**NEW QUESTION 43**

- (Topic 1)

In the context of Biometric authentication, what is a quick way to compare the accuracy of devices. In general, the device that have the lowest value would be the most accurate. Which of the following would be used to compare accuracy of devices?

- A. the CER is used.
- B. the FRR is used
- C. the FAR is used
- D. the FER is used

**Answer:** A

**Explanation:**

equal error rate or crossover error rate (EER or CER): the rate at which both accept and reject errors are equal. The value of the EER can be easily obtained from the ROC curve. The EER is a quick way to compare the accuracy of devices with different ROC curves. In general, the device with the lowest EER is most accurate.

In the context of Biometric Authentication almost all types of detection permit a system's sensitivity to be increased or decreased during an inspection process. If the system's sensitivity is increased, such as in an airport metal detector, the system becomes increasingly selective and has a higher False Reject Rate (FRR). Conversely, if the sensitivity is decreased, the False Acceptance Rate (FAR) will increase. Thus, to have a valid measure of the system performance, the CrossOver Error Rate (CER) is used.

The following are used as performance metrics for biometric systems:

false accept rate or false match rate (FAR or FMR): the probability that the system incorrectly matches the input pattern to a non-matching template in the database. It measures the percent of invalid inputs which are incorrectly accepted. In case of similarity scale, if the person is imposter in real, but the matching score is higher than the threshold, then he is treated as genuine that increase the FAR and hence performance also depends upon the selection of threshold value.

false reject rate or false non-match rate (FRR or FNMR): the probability that the system fails to detect a match between the input pattern and a matching template in the database. It measures the percent of valid inputs which are incorrectly rejected.

failure to enroll rate (FTE or FER): the rate at which attempts to create a template from an input is unsuccessful. This is most commonly caused by low quality inputs.

failure to capture rate (FTC): Within automatic systems, the probability that the system fails to detect a biometric input when presented correctly.

template capacity: the maximum number of sets of data which can be stored in the system. Reference(s) used for this question:

KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 37. and

Wikipedia at: <https://en.wikipedia.org/wiki/Biometrics>

**NEW QUESTION 45**

- (Topic 1)

What is called the verification that the user's claimed identity is valid and is usually implemented through a user password at log-on time?

- A. Authentication
- B. Identification
- C. Integrity
- D. Confidentiality

**Answer:** A

**Explanation:**

Authentication is verification that the user's claimed identity is valid and is usually implemented through a user password at log-on time.

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 36.

**NEW QUESTION 48**

- (Topic 1)

What can be defined as a list of subjects along with their access rights that are authorized to access a specific object?

- A. A capability table
- B. An access control list
- C. An access control matrix
- D. A role-based matrix

**Answer: B**

**Explanation:**

"It [ACL] specifies a list of users [subjects] who are allowed access to each object" CBK, p. 188

A capability table is incorrect. "Capability tables are used to track, manage and apply controls based on the object and rights, or capabilities of a subject. For example, a table identifies the object, specifies access rights allowed for a subject, and permits access based on the user's possession of a capability (or ticket) for the object." CBK, pp. 191-192. The distinction that makes this an incorrect choice is that access is based on possession of a capability by the subject.

To put it another way, as noted in AIO3 on p. 169, "A capability table is different from an ACL because the subject is bound to the capability table, whereas the object is bound to the ACL."

An access control matrix is incorrect. The access control matrix is a way of describing the rules for an access control strategy. The matrix lists the users, groups and roles down the left side and the resources and functions across the top. The cells of the matrix can either indicate that access is allowed or indicate the type of access. CBK pp 317 - 318.

AIO3, p. 169 describes it as a table of subjects and objects specifying the access rights a certain subject possesses pertaining to specific objects.

In either case, the matrix is a way of analyzing the access control needed by a population of subjects to a population of objects. This access control can be applied using rules, ACL's, capability tables, etc.

A role-based matrix is incorrect. Again, a matrix of roles vs objects could be used as a tool for thinking about the access control to be applied to a set of objects.

The results of the analysis could then be implemented using RBAC.

References:

CBK, Domain 2: Access Control. AIO3, Chapter 4: Access Control

**NEW QUESTION 52**

- (Topic 1)

Identification and authentication are the keystones of most access control systems. Identification establishes:

- A. User accountability for the actions on the system.
- B. Top management accountability for the actions on the system.
- C. EDP department accountability for the actions of users on the system.
- D. Authentication for actions on the system

**Answer: A**

**Explanation:**

Identification and authentication are the keystones of most access control systems. Identification establishes user accountability for the actions on the system.

The control environment can be established to log activity regarding the identification, authentication, authorization, and use of privileges on a system. This can be used to detect the occurrence of errors, the attempts to perform an unauthorized action, or to validate when provided credentials were exercised. The logging system as a detective device provides evidence of actions (both successful and unsuccessful) and tasks that were executed by authorized users.

Once a person has been identified through the user ID or a similar value, she must be authenticated, which means she must prove she is who she says she is.

Three general factors can be used for authentication: something a person knows, something a person has, and something a person is. They are also commonly called authentication by knowledge, authentication by ownership, and authentication by characteristic.

For a user to be able to access a resource, he first must prove he is who he claims to be, has the necessary credentials, and has been given the necessary rights or privileges to perform the actions he is requesting. Once these steps are completed successfully, the user can access and use network resources; however, it is necessary to track the user's activities and enforce accountability for his actions.

Identification describes a method of ensuring that a subject (user, program, or process) is the entity it claims to be. Identification can be provided with the use of a username or account number. To be properly authenticated, the subject is usually required to provide a second piece to the credential set. This piece could be a password, passphrase,

cryptographic key, personal identification number (PIN), anatomical attribute, or token.

These two credential items are compared to information that has been previously stored for this subject. If these credentials match the stored information, the subject is authenticated. But we are not done yet. Once the subject provides its credentials and is properly identified, the system it is trying to access needs to determine if this subject has been given the necessary rights and privileges to carry out the requested actions. The system will look at some type of access control matrix or compare security labels to verify that this subject may indeed access the requested resource and perform the actions it is attempting. If the system determines that the subject may access the resource, it authorizes the subject.

Although identification, authentication, authorization, and accountability have close and complementary definitions, each has distinct functions that fulfill a specific requirement in the process of access control. A user may be properly identified and authenticated to the network, but he may not have the authorization to access the files on the file server. On the other hand, a user may be authorized to access the files on the file server, but until she is properly identified and authenticated, those resources are out of reach.

Reference(s) used for this question:

Schneider, Andrew (2013-04-15). Official (ISC)2 Guide to the CISSP CBK, Third Edition: Access Control ((ISC)2 Press) (Kindle Locations 889-892). Auerbach Publications. Kindle Edition.

and

Harris, Shon (2012-10-25). CISSP All-in-One Exam Guide, 6th Edition (Kindle Locations 3875-3878). McGraw-Hill. Kindle Edition.

and

Harris, Shon (2012-10-25). CISSP All-in-One Exam Guide, 6th Edition (Kindle Locations 3833-3848). McGraw-Hill. Kindle Edition.

and

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 36.

**NEW QUESTION 57**

- (Topic 1)

What is called the use of technologies such as fingerprint, retina, and iris scans to authenticate the individuals requesting access to resources?

- A. Micrometrics
- B. Macrometrics
- C. Biometrics
- D. MicroBiometrics

**Answer:** C

**Explanation:**

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 35.

**NEW QUESTION 59**

- (Topic 1)

Which of the following forms of authentication would most likely apply a digital signature algorithm to every bit of data that is sent from the claimant to the verifier?

- A. Dynamic authentication
- B. Continuous authentication
- C. Encrypted authentication
- D. Robust authentication

**Answer:** B

**Explanation:**

Continuous authentication is a type of authentication that provides protection against impostors who can see, alter, and insert information passed between the claimant and verifier even after the claimant/verifier authentication is complete. These are typically referred to as active attacks, since they assume that the imposter can actively influence the connection between claimant and verifier. One way to provide this form of authentication is to apply a digital signature algorithm to every bit of data that is sent from the claimant to the verifier. There are other combinations of cryptography that can provide this form of authentication but current strategies rely on applying some type of cryptography to every bit

of data sent. Otherwise, any unprotected bit would be suspect. Robust authentication relies on dynamic authentication data that changes with each authenticated session between a claimant and a verifier, but does not provide protection against active attacks. Encrypted authentication is a distracter.

Source: GUTTMAN, Barbara & BAGWILL, Robert, NIST Special Publication 800-xx, Internet Security Policy: A Technical Guide, Draft Version, May 25, 2000 (page 34).

**NEW QUESTION 63**

- (Topic 1)

Which of the following attacks could capture network user passwords?

- A. Data diddling
- B. Sniffing
- C. IP Spoofing
- D. Smurfing

**Answer:** B

**Explanation:**

A network sniffer captures a copy every packet that traverses the network segment the sniffer is connect to.

Sniffers are typically devices that can collect information from a communication medium, such as a network. These devices can range from specialized equipment to basic workstations with customized software.

A sniffer can collect information about most, if not all, attributes of the communication. The most common method of sniffing is to plug a sniffer into an existing network device like a hub or switch. A hub (which is designed to relay all traffic passing through it to all of its ports) will automatically begin sending all the traffic on that network segment to the sniffing device. On the other hand, a switch (which is designed to limit what traffic gets sent to which port) will have to be specially configured to send all traffic to the port where the sniffer is plugged in.

Another method for sniffing is to use a network tap—a device that literally splits a network transmission into two identical streams; one going to the original network destination and the other going to the sniffing device. Each of these methods has its advantages and disadvantages, including cost, feasibility, and the desire to maintain the secrecy of the sniffing activity.

The packets captured by sniffer are decoded and then displayed by the sniffer. Therefore, if the username/password are contained in a packet or packets traversing the segment the sniffer is connected to, it will capture and display that information (and any other information on that segment it can see).

Of course, if the information is encrypted via a VPN, SSL, TLS, or similar technology, the information is still captured and displayed, but it is in an unreadable format.

The following answers are incorrect:

Data diddling involves changing data before, as it is entered into a computer, or after it is extracted.

Spoofing is forging an address and inserting it into a packet to disguise the origin of the communication - or causing a system to respond to the wrong address.

Smurfing would refer to the smurf attack, where an attacker sends spoofed packets to the broadcast address on a gateway in order to cause a denial of service.

The following reference(s) were/was used to create this question: CISA Review manual 2014 Page number 321

Official ISC2 Guide to the CISSP 3rd edition Page Number 153

**NEW QUESTION 65**

- (Topic 1)

The Orange Book is founded upon which security policy model?

- A. The Biba Model
- B. The Bell LaPadula Model
- C. Clark-Wilson Model
- D. TEMPEST

**Answer:** B

**Explanation:**

From the glossary of Computer Security Basics:

The Bell-LaPadula model is the security policy model on which the Orange Book requirements are based. From the Orange Book definition, "A formal state transition model of computer security policy that describes a set of access control rules. In this formal model, the entities in a computer system are divided into abstract sets of subjects and objects. The notion of secure state is defined and it is proven that each state transition preserves security by moving from secure state to secure state; thus, inductively proving the system is secure. A system state is defined to be 'secure' if the only permitted access modes of subjects to objects are in accordance with a specific security policy. In order to determine whether or not a specific access mode is allowed, the clearance of a subject is compared to the classification of the object and a determination is made as to whether the subject is authorized for the specific access mode."

The Biba Model is an integrity model of computer security policy that describes a set of rules. In this model, a subject may not depend on any object or other

subject that is less trusted than itself.

The Clark Wilson Model is an integrity model for computer security policy designed for a commercial environment. It addresses such concepts as nondiscretionary access control, privilege separation, and least privilege. TEMPEST is a government program that prevents the compromising electrical and electromagnetic signals that emanate from computers and related equipment from being intercepted and deciphered.

Source: RUSSEL, Deborah & GANGEMI, G.T. Sr., Computer Security Basics, O'Reilly, 1991.

Also: U.S. Department of Defense, Trusted Computer System Evaluation Criteria (Orange Book), DOD 5200.28-STD. December 1985 (also available here).

#### NEW QUESTION 69

- (Topic 1)

How would nonrepudiation be best classified as?

- A. A preventive control
- B. A logical control
- C. A corrective control
- D. A compensating control

**Answer:** A

#### Explanation:

Systems accountability depends on the ability to ensure that senders cannot deny sending information and that receivers cannot deny receiving it. Because the mechanisms implemented in nonrepudiation prevent the ability to successfully repudiate an action, it can be considered as a preventive control.

Source: STONEBURNER, Gary, NIST Special Publication 800-33: Underlying Technical Models for Information Technology Security, National Institute of Standards and Technology, December 2001, page 7.

#### NEW QUESTION 72

- (Topic 1)

Which of the following choices describe a Challenge-response tokens generation?

- A. A workstation or system that generates a random challenge string that the user enters into the token when prompted along with the proper PIN.
- B. A workstation or system that generates a random login id that the user enters when prompted along with the proper PIN.
- C. A special hardware device that is used to generate random text in a cryptography system.
- D. The authentication mechanism in the workstation or system does not determine if the owner should be authenticated.

**Answer:** A

#### Explanation:

Challenge-response tokens are:

- A workstation or system generates a random challenge string and the owner enters the string into the token along with the proper PIN.
- The token generates a response that is then entered into the workstation or system.
- The authentication mechanism in the workstation or system then determines if the owner should be authenticated.

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 37.

Also: HARRIS, Shon, All-In-One CISSP Certification Exam Guide, McGraw-Hill/Osborne, 2002, chapter 4: Access Control (pages 136-137).

#### NEW QUESTION 74

- (Topic 1)

Which of the following is an example of discretionary access control?

- A. Identity-based access control
- B. Task-based access control
- C. Role-based access control
- D. Rule-based access control

**Answer:** A

#### Explanation:

An identity-based access control is an example of discretionary access control that is based on an individual's identity. Identity-based access control (IBAC) is access control based on the identity of the user (typically relayed as a characteristic of the process acting on behalf of that user) where access authorizations to specific objects are assigned based on user identity.

Rule Based Access Control (RuBAC) and Role Based Access Control (RBAC) are examples of non-discretionary access controls.

Rule-based access control is a type of non-discretionary access control because this access is determined by rules and the subject does not decide what those rules will be, the rules are uniformly applied to ALL of the users or subjects.

In general, all access control policies other than DAC are grouped in the category of non-discretionary access control (NDAC). As the name implies, policies in this category have rules that are not established at the discretion of the user. Non-discretionary policies establish controls that cannot be changed by users, but only through administrative action.

Both Role Based Access Control (RBAC) and Rule Based Access Control (RuBAC) fall within Non Discretionary Access Control (NDAC). If it is not DAC or MAC then it is most likely NDAC.

BELOW YOU HAVE A DESCRIPTION OF THE DIFFERENT CATEGORIES:

MAC = Mandatory Access Control

Under a mandatory access control environment, the system or security administrator will define what permissions subjects have on objects. The administrator does not dictate user's access but simply configure the proper level of access as dictated by the Data Owner.

The MAC system will look at the Security Clearance of the subject and compare it with the object sensitivity level or classification level. This is what is called the dominance relationship.

The subject must DOMINATE the object sensitivity level. Which means that the subject must have a security clearance equal or higher than the object he is attempting to access.

MAC also introduce the concept of labels. Every objects will have a label attached to them indicating the classification of the object as well as categories that are used to impose the need to know (NTK) principle. Even thou a user has a security clearance of Secret it does not mean he would be able to access any Secret documents within the system. He would be allowed to access only Secret document for which he has a Need To Know, formal approval, and object where the user belong to one of the categories attached to the object.

If there is no clearance and no labels then IT IS NOT Mandatory Access Control.



Many of the other models can mimic MAC but none of them have labels and a dominance relationship so they are NOT in the MAC category.

DAC = Discretionary Access Control

DAC is also known as: Identity Based access control system.

The owner of an object is define as the person who created the object. As such the owner has the discretion to grant access to other users on the network. Access will be granted based solely on the identity of those users.

Such system is good for low level of security. One of the major problem is the fact that a user who has access to someone's else file can further share the file with other users without the knowledge or permission of the owner of the file. Very quickly this could become the wild wild west as there is no control on the dissimulation of the information.

RBAC = Role Based Access Control

RBAC is a form of Non-Discretionary access control.

Role Based access control usually maps directly with the different types of jobs performed by employees within a company.

For example there might be 5 security administrator within your company. Instead of creating each of their profile one by one, you would simply create a role and assign the administrators to the role. Once an administrator has been assigned to a role, he will IMPLICITLY inherit the permissions of that role.

RBAC is great tool for environment where there is a a large rotation of employees on a daily basis such as a very large help desk for example.

RBAC or RuBAC = Rule Based Access Control RuBAC is a form of Non-Discretionary access control.

A good example of a Rule Based access control device would be a Firewall. A single set of rules is imposed to all users attempting to connect through the firewall.

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the

Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 33. and

NISTIR-7316 at <http://csrc.nist.gov/publications/nistir/7316/NISTIR-7316.pdf> and

[http://itlaw.wikia.com/wiki/Identity-based\\_access\\_control](http://itlaw.wikia.com/wiki/Identity-based_access_control)

#### NEW QUESTION 75

- (Topic 1)

What are the components of an object's sensitivity label?

- A. A Classification Set and a single Compartment.
- B. A single classification and a single compartment.
- C. A Classification Set and user credentials.
- D. A single classification and a Compartment Set.

**Answer: D**

#### Explanation:

Both are the components of a sensitivity label. The following are incorrect:

A Classification Set and a single Compartment. Is incorrect because the nomenclature "Classification Set" is incorrect, there only one classifcation and it is not a "single compartment" but a Compartment Set.

A single classification and a single compartment. Is incorrect because while there only is one classifcation, it is not a "single compartment" but a Compartment Set.

A Classification Set and user credentials. Is incorrect because the nomenclature "Classification Set" is incorrect, there only one classifcation and it is not "user credential" but a Compartment Set. The user would have their own sensitivity label.

#### NEW QUESTION 79

- (Topic 1)

Which type of control is concerned with avoiding occurrences of risks?

- A. Deterrent controls
- B. Detective controls
- C. Preventive controls
- D. Compensating controls

**Answer: C**

#### Explanation:

Preventive controls are concerned with avoiding occurrences of risks while deterrent controls are concerned with discouraging violations. Detecting controls identify occurrences and compensating controls are alternative controls, used to compensate weaknesses in other controls. Supervision is an example of compensating control. Source: TIPTON, Hal, (ISC)2, Introduction to the CISSP Exam presentation.

#### NEW QUESTION 84

- (Topic 1)

Which of the following remote access authentication systems is the most robust?

- A. TACACS+
- B. RADIUS
- C. PAP
- D. TACACS

**Answer: A**

#### Explanation:

TACACS+ is a proprietary Cisco enhancement to TACACS and is more robust than RADIUS. PAP is not a remote access authentication system but a remote node security protocol.

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, John Wiley & Sons, 2001, Chapter 3: Telecommunications and Network Security (page 122).

#### NEW QUESTION 85

- (Topic 1)

What is called the percentage at which the False Rejection Rate equals the False Acceptance Rate?

- A. False Rejection Rate (FRR) or Type I Error

- B. False Acceptance Rate (FAR) or Type II Error
- C. Crossover Error Rate (CER)
- D. Failure to enroll rate (FTE or FER)

**Answer:** C

**Explanation:**

The percentage at which the False Rejection Rate equals the False Acceptance Rate is called the Crossover Error Rate (CER). Another name for the CER is the Equal Error Rate (EER), any of the two terms could be used.

Equal error rate or crossover error rate (EER or CER)

It is the rate at which both accept and reject errors are equal. The EER is a quick way to compare the accuracy of devices with different ROC curves. In general, the device with the lowest EER is most accurate.

The other choices were all wrong answers:

The following are used as performance metrics for biometric systems:

false accept rate or false match rate (FAR or FMR): the probability that the system incorrectly matches the input pattern to a non-matching template in the database. It measures the percent of invalid inputs which are incorrectly accepted. This is when an impostor would be accepted by the system.

False reject rate or false non-match rate (FRR or FNMR): the probability that the system fails to detect a match between the input pattern and a matching template in the database. It measures the percent of valid inputs which are incorrectly rejected. This is when a valid company employee would be rejected by the system.

Failure to enroll rate (FTE or FER): the rate at which attempts to create a template from an input is unsuccessful. This is most commonly caused by low quality inputs.

Reference(s) used for this question:

KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 38.

and <https://en.wikipedia.org/wiki/Biometrics>

**NEW QUESTION 86**

- (Topic 1)

Which security model ensures that actions that take place at a higher security level do not affect actions that take place at a lower level?

- A. The Bell-LaPadula model
- B. The information flow model
- C. The noninterference model
- D. The Clark-Wilson model

**Answer:** C

**Explanation:**

The goal of a noninterference model is to strictly separate differing security levels to assure that higher-level actions do not determine what lower-level users can see. This is in contrast to other security models that control information flows between differing levels of users. By maintaining strict separation of security levels, a noninterference model minimizes leakages that might happen through a covert channel.

The model ensures that any actions that take place at a higher security level do not affect, or interfere with, actions that take place at a lower level.

It is not concerned with the flow of data, but rather with what a subject knows about the state of the system. So if an entity at a higher security level performs an action, it can not change the state for the entity at the lower level.

The model also addresses the inference attack that occurs when some one has access to some type of information and can infer(guess) something that he does not have the clearance level or authority to know.

The following are incorrect answers:

The Bell-LaPadula model is incorrect. The Bell-LaPadula model is concerned only with confidentiality and bases access control decisions on the classification of objects and the clearances of subjects.

The information flow model is incorrect. The information flow models have a similar framework to the Bell-LaPadula model and control how information may flow between objects based on security classes. Information will be allowed to flow only in accordance with the security policy.

The Clark-Wilson model is incorrect. The Clark-Wilson model is concerned with change control and assuring that all modifications to objects preserve integrity by means of well- formed transactions and usage of an access triple (subject - interface - object).

References:

CBK, pp 325 - 326

AIO3, pp. 290 - 291

AIOv4 Security Architecture and Design (page 345)

AIOv5 Security Architecture and Design (pages 347 - 348)

[https://en.wikibooks.org/wiki/Security\\_Architecture\\_and\\_Design/Security\\_Models#Noninterference\\_Models](https://en.wikibooks.org/wiki/Security_Architecture_and_Design/Security_Models#Noninterference_Models)

**NEW QUESTION 87**

- (Topic 1)

Why should batch files and scripts be stored in a protected area?

- A. Because of the least privilege concept.
- B. Because they cannot be accessed by operators.
- C. Because they may contain credentials.
- D. Because of the need-to-know concept.

**Answer:** C

**Explanation:**

Because scripts contain credentials, they must be stored in a protected area and the transmission of the scripts must be dealt with carefully. Operators might need access to batch files and scripts. The least privilege concept requires that each subject in a system be granted the most restrictive set of privileges needed for the performance of authorized tasks. The need-to-know principle requires a user having necessity for access to, knowledge of, or possession of specific information required to perform official tasks or services.

Source: WALLHOFF, John, CISSP Summary 2002, April 2002, CBK#1 Access Control System & Methodology (page 3)

**NEW QUESTION 90**

- (Topic 1)

Which of the following is NOT a compensating measure for access violations?

- A. Backups
- B. Business continuity planning
- C. Insurance
- D. Security awareness

**Answer:** D

**Explanation:**

Security awareness is a preventive measure, not a compensating measure for access violations.

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, John Wiley & Sons, 2001, Chapter 2: Access control systems (page 50).

**NEW QUESTION 92**

- (Topic 1)

Which of the following is the FIRST step in protecting data's confidentiality?

- A. Install a firewall
- B. Implement encryption
- C. Identify which information is sensitive
- D. Review all user access rights

**Answer:** C

**Explanation:**

In order to protect the confidentiality of the data. The following answers are incorrect because :

Install a firewall is incorrect as this would come after the information has been identified for sensitivity levels.

Implement encryption is also incorrect as this is one of the mechanisms to protect the data once it has been identified.

Review all user access rights is also incorrect as this is also a protection mechanism for the identified information.

Reference : Shon Harris AIO v3 , Chapter-4 : Access Control , Page : 126

**NEW QUESTION 94**

- (Topic 1)

Which of the following access control models requires defining classification for objects?

- A. Role-based access control
- B. Discretionary access control
- C. Identity-based access control
- D. Mandatory access control

**Answer:** D

**Explanation:**

With mandatory access control (MAC), the authorization of a subject's access to an object is dependant upon labels, which indicate the subject's clearance, and classification of objects.

The Following answers were incorrect:

Identity-based Access Control is a type of Discretionary Access Control (DAC), they are synonymous.

Role Based Access Control (RBAC) and Rule Based Access Control (RuBAC or RBAC) are types of Non Discretionary Access Control (NDAC).

Tip:

When you have two answers that are synonymous they are not the right choice for sure.

There is only one access control model that makes use of Label, Clearances, and Categories, it is Mandatory Access Control, none of the other one makes use of those items.

Reference(s) used for this question:

KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, John Wiley & Sons, 2001, Chapter 2: Access control systems (page 33).

**NEW QUESTION 97**

- (Topic 1)

The controls that usually require a human to evaluate the input from sensors or cameras to determine if a real threat exists are associated with:

- A. Preventive/physical
- B. Detective/technical
- C. Detective/physical
- D. Detective/administrative

**Answer:** C

**Explanation:**

Detective/physical controls usually require a human to evaluate the input from sensors or cameras to determine if a real threat exists.

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 36.

**NEW QUESTION 98**

- (Topic 1)

Which of the following is NOT part of the Kerberos authentication protocol?

- A. Symmetric key cryptography
- B. Authentication service (AS)
- C. Principals
- D. Public Key

**Answer:** D

**Explanation:**

There is no such component within Kerberos environment. Kerberos uses only symmetric encryption and does not make use of any public key component. The other answers are incorrect because :  
Symmetric key cryptography is a part of Kerberos as the KDC holds all the users' and services' secret keys.  
Authentication service (AS) : KDC (Key Distribution Center) provides an authentication service  
Principals : Key Distribution Center provides services to principals, which can be users, applications or network services.  
References: Shon Harris, AIO v3, Chapter - 4: Access Control, Pages : 152-155.

**NEW QUESTION 102**

- (Topic 1)

The following is NOT a security characteristic we need to consider while choosing a biometric identification systems:

- A. data acquisition process
- B. cost
- C. enrollment process
- D. speed and user interface

**Answer:** B

**Explanation:**

Cost is a factor when considering Biometrics but it is not a security characteristic.  
All the other answers are incorrect because they are security characteristics related to Biometrics.  
data acquisition process can cause a security concern because if the process is not fast and efficient it can discourage individuals from using the process.  
enrollment process can cause a security concern because the enrollment process has to be quick and efficient. This process captures data for authentication.  
speed and user interface can cause a security concern because this also impacts the users acceptance rate of biometrics. If they are not comfortable with the interface and speed they might sabotage the devices or otherwise attempt to circumvent them.  
References:  
OIG Access Control (Biometrics) (pgs 165-167)  
From: TIPTON, Harold F. & KRAUSE, MICKI, Information Security Management Handbook, 4th Edition, Volume 1, Pages 5-6.  
in process of correction

**NEW QUESTION 105**

- (Topic 1)

The National Institute of Standards and Technology (NIST) standard pertaining to perimeter protection states that critical areas should be illuminated up to?

- A. Illuminated at nine feet high with at least three foot-candles
- B. Illuminated at eight feet high with at least three foot-candles
- C. Illuminated at eight feet high with at least two foot-candles
- D. Illuminated at nine feet high with at least two foot-candles

**Answer:** B

**Explanation:**

The National Institute of Standards and Technology (NIST) standard pertaining to perimeter protection states that critical areas should be illuminated eight feet high with at least two foot-candles.  
It can also be referred to as illuminating to a height of eight feet, with a BRIGHTNESS of two foot-candles.  
One footcandle 10.764 lux. The footcandle (or lumen per square foot) is a non-SI unit of illuminance. Like the BTU, it is obsolete but it is still in fairly common use in the United States, particularly in construction-related engineering and in building codes. Because lux and footcandles are different units of the same quantity, it is perfectly valid to convert footcandles to lux and vice versa.  
The name "footcandle" conveys "the illuminance cast on a surface by a one-candela source one foot away." As natural as this sounds, this style of name is now frowned upon, because the dimensional formula for the unit is not foot • candela, but lumens per square foot.  
Some sources do however note that the "lux" can be thought of as a "metre-candle" (i.e. the illuminance cast on a surface by a one-candela source one meter away). A source that is farther away casts less illumination than one that is close, so one lux is less illuminance than one footcandle. Since illuminance follows the inverse-square law, and since one foot = 0.3048 m, one lux = 0.30482 footcandle 1/10.764 footcandle.  
TIPS FROM CLEMENT:  
Illuminance (light level) – The amount of light, measured in foot-candles (US unit), that falls on a surface, either horizontal or vertical.  
Parking lots lighting needs to be an average of 2 foot candles; uniformity of not more than 3:1, no area less than 1 fc.  
All illuminance measurements are to be made on the horizontal plane with a certified light meter calibrated to NIST standards using traceable light sources.  
The CISSP Exam Cram 2 from Michael Gregg says: Lighting is a commonly used form of perimeter protection.  
Some studies have found that up to 80% of criminal acts at businesses and shopping centers happen in adjacent parking lots. Therefore, it's easy to see why lighting can be such an important concern.  
Outside lighting discourages prowlers and thieves.  
The National Institute of Standards and Technologies (NIST) states that, for effective perimeter control, buildings should be illuminated 8 feet high, with 2-foot candle power.  
Reference used for this question:  
HARRIS, Shon, All-In-One CISSP Certification Exam Guide, McGraw-Hill/Osborne, 2001, Page 325.  
and  
Shon's AIO v5 pg 459 and  
<http://en.wikipedia.org/wiki/Foot-candle>

**NEW QUESTION 108**

- (Topic 1)

What is the main focus of the Bell-LaPadula security model?

- A. Accountability
- B. Integrity
- C. Confidentiality



D. Availability

**Answer: C**

**Explanation:**

The Bell-LaPadula model is a formal model dealing with confidentiality.

The Bell-LaPadula Model (abbreviated BLP) is a state machine model used for enforcing access control in government and military applications. It was developed by David Elliott Bell and Leonard J. LaPadula, subsequent to strong guidance from Roger R. Schell to formalize the U.S. Department of Defense (DoD) multilevel security (MLS) policy. The model is a formal state transition model of computer security policy that describes a set of access control rules which use security labels on objects and clearances for subjects. Security labels range from the most sensitive (e.g. "Top Secret"), down to the least sensitive (e.g., "Unclassified" or "Public").

The Bell-LaPadula model focuses on data confidentiality and controlled access to classified information, in contrast to the Biba Integrity Model which describes rules for the protection of data integrity. In this formal model, the entities in an information system are divided into subjects and objects.

The notion of a "secure state" is defined, and it is proven that each state transition preserves security by moving from secure state to secure state, thereby inductively proving that the system satisfies the security objectives of the model. The Bell-LaPadula model is built on the concept of a state machine with a set of allowable states in a computer network system. The transition from one state to another state is defined by transition functions.

A system state is defined to be "secure" if the only permitted access modes of subjects to objects are in accordance with a security policy. To determine whether a specific access mode is allowed, the clearance of a subject is compared to the classification of the object (more precisely, to the combination of classification and set of compartments, making up the security level) to determine if the subject is authorized for the specific access mode.

The clearance/classification scheme is expressed in terms of a lattice. The model defines two mandatory access control (MAC) rules and one discretionary access control (DAC) rule with three security properties:

The Simple Security Property - a subject at a given security level may not read an object at a higher security level (no read-up).

The -property (read "star"-property) - a subject at a given security level must not write to any object at a lower security level (no write-down). The -property is also known as the Confinement property.

The Discretionary Security Property - use of an access matrix to specify the discretionary access control.

The following are incorrect answers:

Accountability is incorrect. Accountability requires that actions be traceable to the user that performed them and is not addressed by the Bell-LaPadula model.

Integrity is incorrect. Integrity is addressed in the Biba model rather than Bell-Lapadula. Availability is incorrect. Availability is concerned with assuring that data/services are available to authorized users as specified in service level objectives and is not addressed by the Bell-Lapadula model.

References: CBK, pp. 325-326

AIO3, pp. 279 - 284

AIOv4 Security Architecture and Design (pages 333 - 336) AIOv5 Security Architecture and Design (pages 336 - 338)

Wikipedia at [https://en.wikipedia.org/wiki/Bell-La\\_Padula\\_model](https://en.wikipedia.org/wiki/Bell-La_Padula_model)

**NEW QUESTION 111**

- (Topic 1)

What security model implies a central authority that define rules and sometimes global rules, dictating what subjects can have access to what objects?

- A. Flow Model
- B. Discretionary access control
- C. Mandatory access control
- D. Non-discretionary access control

**Answer: D**

**Explanation:**

As a security administrator you might configure user profiles so that users cannot change the system's time, alter system configuration files, access a command prompt, or install unapproved applications. This type of access control is referred to as nondiscretionary, meaning that access decisions are not made at the discretion of the user. Nondiscretionary access controls are put into place by an authoritative entity (usually a security administrator) with the goal of protecting the organization's most critical assets.

Non-discretionary access control is when a central authority determines what subjects can have access to what objects based on the organizational security policy. Centralized access control is not an existing security model.

Both, Rule Based Access Control (RuBAC or RBAC) and Role Based Access Controls (RBAC) falls into this category.

Reference(s) used for this question:

Harris, Shon (2012-10-18). CISSP All-in-One Exam Guide, 6th Edition (p. 221). McGraw- Hill. Kindle Edition.

and

KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, John Wiley & Sons, 2001, Chapter 2: Access control systems (page 33).

**NEW QUESTION 115**

- (Topic 1)

What does it mean to say that sensitivity labels are "incomparable"?

- A. The number of classification in the two labels is different.
- B. Neither label contains all the classifications of the other.
- C. the number of categories in the two labels are different.
- D. Neither label contains all the categories of the other.

**Answer: D**

**Explanation:**

If a category does not exist then you cannot compare it. Incomparable is when you have two disjointed sensitivity labels, that is a category in one of the labels is not in the other label. "Because neither label contains all the categories of the other, the labels can't be compared. They're said to be incomparable"

COMPARABILITY:

The label:

TOP SECRET [VENUS ALPHA]

is "higher" than either of the labels:

SECRET [VENUS ALPHA] TOP SECRET [VENUS]

But you can't really say that the label:

TOP SECRET [VENUS]

is higher than the label:

SECRET [ALPHA]

Because neither label contains all the categories of the other, the labels can't be compared. They're said to be incomparable. In a mandatory access control system, you won't be allowed access to a file whose label is incomparable to your clearance.

The Multilevel Security policy uses an ordering relationship between labels known as the dominance relationship. Intuitively, we think of a label that dominates another as being "higher" than the other. Similarly, we think of a label that is dominated by another as being "lower" than the other. The dominance relationship is used to determine permitted operations and information flows.

**DOMINANCE**

The dominance relationship is determined by the ordering of the Sensitivity/Clearance component of the label and the intersection of the set of Compartments.

Sample Sensitivity/Clearance ordering are:

Top Secret > Secret > Confidential > Unclassified  $s_3 > s_2 > s_1 > s_0$

Formally, for label one to dominate label 2 both of the following must be true: The sensitivity/clearance of label one must be greater than or equal to the sensitivity/clearance of label two.

The intersection of the compartments of label one and label two must equal the compartments of label two.

Additionally:

Two labels are said to be equal if their sensitivity/clearance and set of compartments are exactly equal. Note that dominance includes equality.

One label is said to strictly dominate the other if it dominates the other but is not equal to the other.

Two labels are said to be incomparable if each label has at least one compartment that is not included in the other's set of compartments.

The dominance relationship will produce a partial ordering over all possible MLS labels, resulting in what is known as the MLS Security Lattice.

The following answers are incorrect:

The number of classification in the two labels is different. Is incorrect because the categories are what is being compared, not the classifications.

Neither label contains all the classifications of the other. Is incorrect because the categories are what is being compared, not the classifications.

the number of categories in the two labels is different. Is incorrect because it is possible a category exists more than once in one sensitivity label and does exist in the other so they would be comparable.

Reference(s) used for this question:

O'Reilly - Computer Systems and Access Control (Chapter 3) <http://www.oreilly.com/catalog/csb/chapter/ch03.html>

and [http://rubix.com/cms/mls\\_dom](http://rubix.com/cms/mls_dom)

### NEW QUESTION 119

- (Topic 1)

Which of the following exemplifies proper separation of duties?

- A. Operators are not permitted modify the system time.
- B. Programmers are permitted to use the system console.
- C. Console operators are permitted to mount tapes and disks.
- D. Tape operators are permitted to use the system console.

**Answer: A**

#### Explanation:

This is an example of Separation of Duties because operators are prevented from modifying the system time which could lead to fraud. Tasks of this nature should be performed by the system administrators.

AIO defines Separation of Duties as a security principle that splits up a critical task among two or more individuals to ensure that one person cannot complete a risky task by himself.

The following answers are incorrect:

Programmers are permitted to use the system console. Is incorrect because programmers should not be permitted to use the system console, this task should be performed by operators. Allowing programmers access to the system console could allow fraud to occur so this is not an example of Separation of Duties..

Console operators are permitted to mount tapes and disks. Is incorrect because operators should be able to mount tapes and disks so this is not an example of Separation of Duties.

Tape operators are permitted to use the system console. Is incorrect because operators should be able to use the system console so this is not an example of Separation of Duties.

References:

OIG CBK Access Control (page 98 - 101) AIOv3 Access Control (page 182)

### NEW QUESTION 120

- (Topic 1)

In the context of access control, locks, gates, guards are examples of which of the following?

- A. Administrative controls
- B. Technical controls
- C. Physical controls
- D. Logical controls

**Answer: C**

#### Explanation:

Administrative, technical and physical controls are categories of access control mechanisms.

Logical and Technical controls are synonymous. So both of them could be eliminated as possible choices.

Physical Controls: These are controls to protect the organization's people and physical environment, such as locks, gates, and guards. Physical controls may be called "operational controls" in some contexts.

Physical security covers a broad spectrum of controls to protect the physical assets (primarily the people) in an organization. Physical Controls are sometimes referred to as "operational" controls in some risk management frameworks. These controls range from doors, locks, and windows to environment controls, construction standards, and guards. Typically, physical security is based on the notion of establishing security zones or concentric areas within a facility that require increased security as you get closer to the

valuable assets inside the facility. Security zones are the physical representation of the defense-in-depth principle discussed earlier in this chapter. Typically, security zones are associated with rooms, offices, floors, or smaller elements, such as a cabinet or storage locker. The design of the physical security controls within the facility must take into account the protection of the asset as well as the individuals working in that area.

Reference(s) used for this question:

Hernandez CISSP, Steven (2012-12-21). Official (ISC)2 Guide to the CISSP CBK, Third Edition ((ISC)2 Press) (Kindle Locations 1301-1303). Auerbach Publications. Kindle Edition.

and

Hernandez CISSP, Steven (2012-12-21). Official (ISC)2 Guide to the CISSP CBK, Third Edition ((ISC)2 Press) (Kindle Locations 1312-1318). Auerbach Publications. Kindle Edition.

#### NEW QUESTION 122

- (Topic 1)

Which of the following is not a preventive login control?

- A. Last login message
- B. Password aging
- C. Minimum password length
- D. Account expiration

**Answer:** A

#### Explanation:

The last login message displays the last login date and time, allowing a user to discover if their account was used by someone else. Hence, this is rather a detective control.

Source: RUSSEL, Deborah & GANGEMI, G.T. Sr., Computer Security Basics, O'Reilly, July 1992 (page 63).

#### NEW QUESTION 126

- (Topic 1)

Which of the following division is defined in the TCSEC (Orange Book) as minimal protection?

- A. Division D
- B. Division C
- C. Division B
- D. Division A

**Answer:** A

#### Explanation:

The criteria are divided into four divisions: D, C, B, and A ordered in a hierarchical manner with the highest division (A) being reserved for systems providing the most comprehensive security.

Each division represents a major improvement in the overall confidence one can place in the system for the protection of sensitive information.

Within divisions C and B there are a number of subdivisions known as classes. The classes are also ordered in a hierarchical manner with systems representative of division C and lower classes of division B being characterized by the set of computer security mechanisms that they possess.

Assurance of correct and complete design and implementation for these systems is gained mostly through testing of the security- relevant portions of the system.

The security-relevant portions of a system are referred to throughout this document as the Trusted Computing Base (TCB).

Systems representative of higher classes in division B and division A derive their security attributes more from their design and implementation structure.

Increased assurance that the required features are operative, correct, and tamperproof under all circumstances is gained through progressively more rigorous analysis during the design process.

TCSEC provides a classification system that is divided into hierarchical divisions of assurance levels:

Division D - minimal security Division C - discretionary protection Division B - mandatory protection Division A - verified protection

Reference: page 358 AIO V.5 Shon Harris

also

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, page 197.

Also:

THE source for all TCSEC "level" questions: <http://csrc.nist.gov/publications/secpubs/rainbow/std001.txt>

#### NEW QUESTION 128

- (Topic 1)

Controls provide accountability for individuals who are accessing sensitive information. This accountability is accomplished:

- A. through access control mechanisms that require identification and authentication and through the audit function.
- B. through logical or technical controls involving the restriction of access to systems and the protection of information.
- C. through logical or technical controls but not involving the restriction of access to systems and the protection of information.
- D. through access control mechanisms that do not require identification and authentication and do not operate through the audit function.

**Answer:** A

#### Explanation:

Controls provide accountability for individuals who are accessing sensitive information. This accountability is accomplished through access control mechanisms that require identification and authentication and through the audit function. These controls must be in accordance with and accurately represent the organization's security policy. Assurance procedures ensure that the control mechanisms correctly implement the security policy for the entire life cycle of an information system.

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 33.

#### NEW QUESTION 129

- (Topic 1)

Examples of types of physical access controls include all EXCEPT which of the following?

- A. badges
- B. locks
- C. guards
- D. passwords

**Answer:** D

#### Explanation:

Passwords are considered a Preventive/Technical (logical) control. The following answers are incorrect:

badges Badges are a physical control used to identify an individual. A badge can include a smart device which can be used for authentication and thus a Technical control, but the actual badge itself is primarily a physical control.

locks Locks are a Preventative Physical control and has no Technical association. guards Guards are a Preventative Physical control and has no Technical association.

The following reference(s) were/was used to create this question:

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, John Wiley & Sons, 2001, Chapter 2: Access control systems (page 35).

#### NEW QUESTION 134

- (Topic 1)

What is Kerberos?

- A. A three-headed dog from the Egyptian mythology.
- B. A trusted third-party authentication protocol.
- C. A security model.
- D. A remote authentication dial in user server.

**Answer: B**

#### Explanation:

Is correct because that is exactly what Kerberos is. The following answers are incorrect:

A three-headed dog from Egyptian mythology. Is incorrect because we are dealing with Information Security and not the Egyptian mythology but the Greek Mythology.

A security model. Is incorrect because Kerberos is an authentication protocol and not just a security model.

A remote authentication dial in user server. Is incorrect because Kerberos is not a remote authentication dial in user server that would be called RADIUS.

#### NEW QUESTION 135

- (Topic 1)

Like the Kerberos protocol, SESAME is also subject to which of the following?

- A. timeslot replay
- B. password guessing
- C. symmetric key guessing
- D. asymmetric key guessing

**Answer: B**

#### Explanation:

Sesame is an authentication and access control protocol, that also supports communication confidentiality and integrity. It provides public key based authentication along with the Kerberos style authentication, that uses symmetric key cryptography. Sesame supports the Kerberos protocol and adds some security extensions like public key based authentication and an ECMA-style Privilege Attribute Service.

The users under SESAME can authenticate using either symmetric encryption as in Kerberos or Public Key authentication. When using Symmetric Key authentication as in Kerberos, SESAME is also vulnerable to password guessing just like Kerberos would be.

The Symmetric key being used is based on the password used by the user when he logged on the system. If the user has a simple password it could be guessed or compromise. Even though Kerberos or SESAME may be used, there is still a need to have strong password discipline.

The Basic Mechanism in Sesame for strong authentication is as follows:

The user sends a request for authentication to the Authentication Server as in Kerberos, except that SESAME is making use of public key cryptography for authentication where the client will present his digital certificate and the request will be signed using a digital signature. The signature is communicated to the authentication server through the preauthentication fields. Upon receipt of this request, the authentication server will verify the certificate, then validate the signature, and if all is fine the AS will issue a ticket granting ticket (TGT) as in Kerberos. This TGT will be used to communicate with the privilege attribute server (PAS) when access to a resource is needed.

Users may authenticate using either a public key pair or a conventional (symmetric) key. If public key cryptography is used, public key data is transported in preauthentication data fields to help establish identity.

Kerberos uses tickets for authenticating subjects to objects and SESAME uses Privileged Attribute Certificates (PAC), which contain the subject's identity, access capabilities for the object, access time period, and lifetime of the PAC. The PAC is digitally signed so that the object can validate that it came from the trusted authentication server, which is referred to as the privilege attribute server (PAS). The PAS holds a similar role as the KDC within Kerberos. After a user successfully authenticates to the authentication service (AS), he is presented with a token to give to the PAS. The PAS then creates a PAC for the user to present to the resource he is trying to access.

Reference(s) used for this question: <http://srg.cs.uiuc.edu/Security/nephilim/Internal/SESAME.txt>

and

KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 43.

#### NEW QUESTION 140

- (Topic 1)

In Synchronous dynamic password tokens:

- A. The token generates a new password value at fixed time intervals (this password could be based on the time of day encrypted with a secret key).
- B. The token generates a new non-unique password value at fixed time intervals (this password could be based on the time of day encrypted with a secret key).
- C. The unique password is not entered into a system or workstation along with an owner's PIN.
- D. The authentication entity in a system or workstation knows an owner's secret key and PIN, and the entity verifies that the entered password is invalid and that it was entered during the invalid time window.

**Answer: A**

#### Explanation:

Synchronous dynamic password tokens:

- The token generates a new password value at fixed time intervals (this password could be the time of day encrypted with a secret key).

- the unique password is entered into a system or workstation along with an owner's PIN.

- The authentication entity in a system or workstation knows an owner's secret key and PIN, and the entity verifies that the entered password is valid and that it was entered during the valid time window.



Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 37.

**NEW QUESTION 144**

- (Topic 1)

Why do buffer overflows happen? What is the main cause?

- A. Because buffers can only hold so much data
- B. Because of improper parameter checking within the application
- C. Because they are an easy weakness to exploit
- D. Because of insufficient system memory

**Answer: B**

**Explanation:**

Buffer Overflow attack takes advantage of improper parameter checking within the application. This is the classic form of buffer overflow and occurs because the programmer accepts whatever input the user supplies without checking to make sure that the length of the input is less than the size of the buffer in the program. The buffer overflow problem is one of the oldest and most common problems in software development and programming, dating back to the introduction of interactive computing. It can result when a program fills up the assigned buffer of memory with more data than its buffer can hold. When the program begins to write beyond the end of the buffer, the program's execution path can be changed, or data can be written into areas used by the operating system itself. This can lead to the insertion of malicious code that can be used to gain administrative privileges on the program or system.

As explained by Gaurab, it can become very complex. At the time of input even if you are checking the length of the input, it has to be check against the buffer size. Consider a case where entry point of data is stored in Buffer1 of Application1 and then you copy it to Buffer2 within Application2 later on, if you are just checking the length of data against Buffer1, it will

not ensure that it will not cause a buffer overflow in Buffer2 of Application2.

A bit of reassurance from the ISC2 book about level of Coding Knowledge needed for the exam:

It should be noted that the CISSP is not required to be an expert programmer or know the inner workings of developing application software code, like the FORTRAN programming language, or how to develop Web applet code using Java. It is not even necessary that the CISSP know detailed security-specific coding practices such as the major divisions of buffer overflow exploits or the reason for preferring `str(n)cpy` to `strcpy` in the C language (although all such knowledge is, of course, helpful). Because the CISSP may be the person responsible for ensuring that security is included in such developments, the CISSP should know the basic procedures and concepts involved during the design and development of software programming. That is, in order for the CISSP to monitor the software development process and verify that security is included, the CISSP must understand the fundamental concepts of programming developments and the security strengths and weaknesses of various application development processes.

The following are incorrect answers:

"Because buffers can only hold so much data" is incorrect. This is certainly true but is not the best answer because the finite size of the buffer is not the problem -- the problem is that the programmer did not check the size of the input before moving it into the buffer.

"Because they are an easy weakness to exploit" is incorrect. This answer is sometimes true but is not the best answer because the root cause of the buffer overflow is that the programmer did not check the size of the user input.

"Because of insufficient system memory" is incorrect. This is irrelevant to the occurrence of a buffer overflow.

Reference(s) used for this question:

Hernandez CISSP, Steven (2012-12-21). Official (ISC)2 Guide to the CISSP CBK, Third Edition ((ISC)2 Press) (Kindle Locations 13319-13323). Auerbach Publications. Kindle Edition.

**NEW QUESTION 146**

- (Topic 1)

In Mandatory Access Control, sensitivity labels attached to object contain what information?

- A. The item's classification
- B. The item's classification and category set
- C. The item's category
- D. The items's need to know

**Answer: B**

**Explanation:**

A Sensitivity label must contain at least one classification and one category set.

Category set and Compartment set are synonyms, they mean the same thing. The sensitivity label must contain at least one Classification and at least one Category. It is common in some environments for a single item to belong to multiple categories. The list of all the categories to which an item belongs is called a compartment set or category set.

The following answers are incorrect:

the item's classification. Is incorrect because you need a category set as well.

the item's category. Is incorrect because category set and classification would be both be required.

The item's need to know. Is incorrect because there is no such thing. The need to know is indicated by the catergories the object belongs to. This is NOT the best answer.

Reference(s) used for this question:

OIG CBK, Access Control (pages 186 - 188)

AIO, 3rd Edition, Access Control (pages 162 - 163) AIO, 4th Edittion, Access Control, pp 212-214.

Wikipedia - [http://en.wikipedia.org/wiki/Mandatory\\_Access\\_Control](http://en.wikipedia.org/wiki/Mandatory_Access_Control)

**NEW QUESTION 147**

- (Topic 1)

How are memory cards and smart cards different?

- A. Memory cards normally hold more memory than smart cards
- B. Smart cards provide a two-factor authentication whereas memory cards don't
- C. Memory cards have no processing power
- D. Only smart cards can be used for ATM cards

**Answer: C**

**Explanation:**

The main difference between memory cards and smart cards is their capacity to process information. A memory card holds information but cannot process information. A smart card holds information and has the necessary hardware and software to actually process that information. A memory card holds a user's authentication information, so that this user needs only type in a user ID or PIN and presents the memory card to the system. If the entered information and the stored information match and are approved by an authentication service, the user is successfully authenticated. A common example of a memory card is a swipe card used to provide entry to a building. The user enters a PIN and swipes the memory card through a card reader. If this is the correct combination, the reader flashes green and the individual can open the door and enter the building. Memory cards can also be used with computers, but they require a reader to process the information. The reader adds cost to the process, especially when one is needed for every computer. Additionally, the overhead of PIN and card generation adds additional overhead and complexity to the whole authentication process. However, a memory card provides a more secure authentication method than using only a password because the attacker would need to obtain the card and know the correct PIN. Administrators and management need to weigh the costs and benefits of a memory card implementation as well as the security needs of the organization to determine if it is the right authentication mechanism for their environment. One of the most prevalent weaknesses of memory cards is that data stored on the card are not protected. Unencrypted data on the card (or stored on the magnetic strip) can be extracted or copied. Unlike a smart card, where security controls and logic are embedded in the integrated circuit, memory cards do not employ an inherent mechanism to protect the data from exposure. Very little trust can be associated with confidentiality and integrity of information on the memory cards. The following answers are incorrect: "Smart cards provide two-factor authentication whereas memory cards don't" is incorrect. This is not necessarily true. A memory card can be combined with a pin or password to offer two factors authentication where something you have and something you know are used for factors. "Memory cards normally hold more memory than smart cards" is incorrect. While a memory card may or may not have more memory than a smart card, this is certainly not the best answer to the question. "Only smart cards can be used for ATM cards" is incorrect. This depends on the decisions made by the particular institution and is not the best answer to the question. Reference(s) used for this question: Shon Harris, CISSP All In One, 6th edition , Access Control, Page 199 and also for people using the Kindle edition of the book you can look at Locations 4647-4650. Schneiter, Andrew (2013-04-15). Official (ISC)2 Guide to the CISSP CBK, Third Edition : Access Control ((ISC)2 Press) (Kindle Locations 2124-2139). Auerbach Publications. Kindle Edition.

**NEW QUESTION 150**

- (Topic 1)

In response to Access-request from a client such as a Network Access Server (NAS), which of the following is not one of the response from a RADIUS Server?

- A. Access-Accept
- B. Access-Reject
- C. Access-Granted
- D. Access-Challenge

**Answer: C**

**Explanation:**

In response to an access-request from a client, a RADIUS server returns one of three authentication responses: access-accept, access-reject, or access-challenge, the latter being a request for additional authentication information such as a one-time password from a token or a callback identifier. Source: TIPTON, Harold F. & KRAUSE, MICKI, Information Security Management Handbook, 4th Edition, Volume 2, 2001, CRC Press, NY, page 36.

**NEW QUESTION 155**

- (Topic 1)

In biometric identification systems, the parts of the body conveniently available for identification are:

- A. neck and mouth
- B. hands, face, and eyes
- C. feet and hair
- D. voice and neck

**Answer: B**

**Explanation:**

Today implementation of fast, accurate, reliable, and user-acceptable biometric identification systems are already under way. Because most identity authentication takes place when a people are fully clothed (neck to feet and wrists), the parts of the body conveniently available for this purpose are hands, face, and eyes. From: TIPTON, Harold F. & KRAUSE, MICKI, Information Security Management Handbook, 4th Edition, Volume 1, Page 7.

**NEW QUESTION 157**

- (Topic 1)

Which access model is most appropriate for companies with a high employee turnover?

- A. Role-based access control
- B. Mandatory access control
- C. Lattice-based access control
- D. Discretionary access control

**Answer: A**

**Explanation:**

The underlying problem for a company with a lot of turnover is assuring that new employees are assigned the correct access permissions and that those permissions are removed when they leave the company. Selecting the best answer requires one to think about the access control options in the context of a company with a lot of flux in the employee population. RBAC simplifies the task of assigning permissions because the permissions are assigned to roles which do not change based on who belongs to them. As employees join the company, it is simply a matter of assigning them to the appropriate roles and their permissions derive from their assigned role. They will implicitly inherit the permissions of the role or roles they have been assigned to. When they leave the company or change jobs, their role assignment is revoked/changed

appropriately.

Mandatory access control is incorrect. While controlling access based on the clearance level of employees and the sensitivity of objects is a better choice than some of the other incorrect answers, it is not the best choice when RBAC is an option and you are looking for the best solution for a high number of employees constantly leaving or joining the company.

Lattice-based access control is incorrect. The lattice is really a mathematical concept that is used in formally modeling information flow (Bell-Lapadula, Biba, etc).

In the context of the question, an abstract model of information flow is not an appropriate choice. CBK, pp. 324- 325.

Discretionary access control is incorrect. When an employee joins or leaves the company, the object owner must grant or revoke access for that employee on all the objects they own. Problems would also arise when the owner of an object leaves the company. The complexity of assuring that the permissions are added and removed correctly makes this the least desirable solution in this situation.

References

All in One, third edition page 165

RBAC is discussed on pp. 189 through 191 of the ISC(2) guide.

#### NEW QUESTION 162

- (Topic 1)

Password management falls into which control category?

- A. Compensating
- B. Detective
- C. Preventive
- D. Technical

**Answer: C**

#### Explanation:

Password management is an example of preventive control. Proper passwords prevent unauthorized users from accessing a system.

There are literally hundreds of different access approaches, control methods, and technologies, both in the physical world and in the virtual electronic world. Each method addresses a different type of access control or a specific access need.

For example, access control solutions may incorporate identification and authentication mechanisms, filters, rules, rights, logging and monitoring, policy, and a plethora of other

controls. However, despite the diversity of access control methods, all access control systems can be categorized into seven primary categories.

The seven main categories of access control are:

- \* 1. Directive: Controls designed to specify acceptable rules of behavior within an organization
- \* 2. Deterrent: Controls designed to discourage people from violating security directives
- \* 3. Preventive: Controls implemented to prevent a security incident or information breach
- \* 4. Compensating: Controls implemented to substitute for the loss of primary controls and mitigate risk down to an acceptable level
- \* 5. Detective: Controls designed to signal a warning when a security control has been breached
- \* 6. Corrective: Controls implemented to remedy circumstance, mitigate damage, or restore controls
- \* 7. Recovery: Controls implemented to restore conditions to normal after a security incident

Reference(s) used for this question:

Hernandez CISSP, Steven (2012-12-21). Official (ISC)2 Guide to the CISSP CBK, Third Edition ((ISC)2 Press) (Kindle Locations 1156-1176). Auerbach Publications. Kindle Edition.

#### NEW QUESTION 164

- (Topic 1)

What are called user interfaces that limit the functions that can be selected by a user?

- A. Constrained user interfaces
- B. Limited user interfaces
- C. Mini user interfaces
- D. Unlimited user interfaces

**Answer: A**

#### Explanation:

Constrained user interfaces limit the functions that can be selected by a user.

Another method for controlling access is by restricting users to specific functions based on their role in the system. This is typically implemented by limiting available menus, data views, encryption, or by physically constraining the user interfaces.

This is common on devices such as an automated teller machine (ATM). The advantage of a constrained user interface is that it limits potential avenues of attack and system failure by restricting the processing options that are available to the user.

On an ATM machine, if a user does not have a checking account with the bank he or she will not be shown the "Withdraw money from checking" option. Likewise, an information system might have an "Add/Remove Users" menu option for administrators, but if a normal, non-administrative user logs in he or she will not even see that menu option. By not even identifying potential options for non-qualifying users, the system limits the potentially harmful execution of unauthorized system or application commands.

Many database management systems have the concept of "views." A database view is an extract of the data stored in the database that is filtered based on predefined user or system criteria. This permits multiple users to access the same database while only having the ability to access data they need (or are allowed to have) and not data for another user. The use of database views is another example of a constrained user interface.

The following were incorrect answers:

All of the other choices presented were bogus answers.

The following reference(s) were used for this question:

Hernandez CISSP, Steven (2012-12-21). Official (ISC)2 Guide to the CISSP CBK, Third Edition ((ISC)2 Press) (Kindle Locations 1989-2002). Auerbach Publications. Kindle Edition.

#### NEW QUESTION 165

- (Topic 1)

The primary service provided by Kerberos is which of the following?

- A. non-repudiation
- B. confidentiality
- C. authentication
- D. authorization

**Answer:** C

**Explanation:**

The Answer authentication. Kerberos is an authentication service. It can use single-factor or multi-factor authentication methods.

The following answers are incorrect:

non-repudiation. Since Kerberos deals primarily with symmetric cryptography, it does not help with non-repudiation.

confidentiality. Once the client is authenticated by Kerberos and obtains its session key and ticket, it may use them to assure confidentiality of its communication with a server; however, that is not a Kerberos service as such.

authorization. Although Kerberos tickets may include some authorization information, the meaning of the authorization fields is not standardized in the Kerberos specifications, and authorization is not a primary Kerberos service.

The following reference(s) were/was used to create this question:

ISC2 OIG,2007 p. 179-184

Shon Harris AIO v.3 152-155

**NEW QUESTION 170**

- (Topic 1)

Which of the following are not Remote Access concerns?

- A. Justification for remote access
- B. Auditing of activities
- C. Regular review of access privileges
- D. Access badges

**Answer:** D

**Explanation:**

Access badges are more relevant to physical security rather than remote access.

"Justification for remote access" is incorrect. Justification for remote access is a relevant concern.

"Auditing of activities" is incorrect. Auditing of activities is an important aspect to assure that malicious or unauthorized activities are not occurring.

"Regular review of access privileges" is incorrect. Regular review of remote access privileges is an important management responsibility.

References:

AIO3, pp. 547 - 548

**NEW QUESTION 171**

- (Topic 1)

Which of the following classes is defined in the TCSEC (Orange Book) as discretionary protection?

- A. C
- B. B
- C. A
- D. D

**Answer:** A

**Explanation:**

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, page 197.

Also: THE source for all TCSEC "level" questions: <http://csrc.nist.gov/publications/secpubs/rainbow/std001.txt>

**NEW QUESTION 175**

- (Topic 1)

Which type of password provides maximum security because a new password is required for each new log-on?

- A. One-time or dynamic password
- B. Cognitive password
- C. Static password
- D. Passphrase

**Answer:** A

**Explanation:**

"one-time password" provides maximum security because a new password is required for each new log-on.

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 36.

**NEW QUESTION 176**

- (Topic 2)

Which of the following is BEST defined as a physical control?

- A. Monitoring of system activity
- B. Fencing
- C. Identification and authentication methods
- D. Logical access control mechanisms

**Answer:** B

**Explanation:**

Physical controls are items put into place to protect facility, personnel, and resources. Examples of physical controls are security guards, locks, fencing, and lighting.

The following answers are incorrect answers:



Monitoring of system activity is considered to be administrative control.

Identification and authentication methods are considered to be a technical control. Logical access control mechanisms is also considered to be a technical control.

Reference(s) used for this question:

Harris, Shon (2012-10-25). CISSP All-in-One Exam Guide, 6th Edition (Kindle Locations 1280-1282). McGraw-Hill. Kindle Edition.

#### NEW QUESTION 177

- (Topic 2)

Which of the following statements pertaining to the security kernel is incorrect?

- A. The security kernel is made up of mechanisms that fall under the TCB and implements and enforces the reference monitor concept.
- B. The security kernel must provide isolation for the processes carrying out the reference monitor concept and they must be tamperproof.
- C. The security kernel must be small enough to be able to be tested and verified in a complete and comprehensive manner.
- D. The security kernel is an access control concept, not an actual physical component.

**Answer: D**

#### Explanation:

The reference monitor, not the security kernel is an access control concept.

The security kernel is made up of software, and firmware components that fall within the TCB and implements and enforces the reference monitor concept. The security kernel mediates all access and functions between subjects and objects. The security kernel is the core of the TCB and is the most commonly used approach to building trusted computing systems.

There are three main requirements of the security kernel:

- It must provide isolation for the processes carrying out the reference monitor concept, and the processes must be tamperproof.
- It must be invoked for every access attempt and must be impossible to circumvent. Thus, the security kernel must be implemented in a complete and foolproof way.
- It must be small enough to be able to be tested and verified in a complete and comprehensive manner.

The following answers are incorrect:

The security kernel is made up of mechanisms that fall under the TCB and implements and enforces the reference monitor concept. Is incorrect because this is the definition of the security kernel.

The security kernel must provide isolation for the processes carrying out the reference monitor concept and they must be tamperproof. Is incorrect because this is one of the three requirements that make up the security kernel.

The security kernel must be small enough to be able to be tested and verified in a complete and comprehensive manner. Is incorrect because this is one of the three requirements that make up the security kernel.

#### NEW QUESTION 181

- (Topic 2)

Related to information security, integrity is the opposite of which of the following?

- A. abstraction
- B. alteration
- C. accreditation
- D. application

**Answer: B**

#### Explanation:

Integrity is the opposite of "alteration."

Source: KRUTZ, Ronald L. & VINES, Russel D., The CISSP Prep Guide: Mastering the Ten Domains of Computer Security, 2001, John Wiley & Sons, Page 59.

#### NEW QUESTION 184

- (Topic 2)

When considering an IT System Development Life-cycle, security should be:

- A. Mostly considered during the initiation phase.
- B. Mostly considered during the development phase.
- C. Treated as an integral part of the overall system design.
- D. Added once the design is completed.

**Answer: C**

#### Explanation:

Security must be considered in information system design. Experience has shown it is very difficult to implement security measures properly and successfully after a system has been developed, so it should be integrated fully into the system life-cycle process. This includes establishing security policies, understanding the resulting security requirements, participating in the evaluation of security products, and finally in the engineering, design, implementation, and disposal of the system.

Source: STONEBURNER, Gary & al, National Institute of Standards and Technology (NIST), NIST Special Publication 800-27, Engineering Principles for Information Technology Security (A Baseline for Achieving Security), June 2001 (page 7).

#### NEW QUESTION 187

- (Topic 2)

Which of the following is used to interrupt the opportunity to use or perform collusion to subvert operation for fraudulent purposes?

- A. Key escrow
- B. Rotation of duties
- C. Principle of need-to-know
- D. Principle of least privilege

**Answer: B**

**Explanation:**

Job rotations reduce the risk of collusion of activities between individuals. Companies with individuals working with sensitive information or systems where there might be the opportunity for personal gain through collusion can benefit by integrating job rotation with segregation of duties. Rotating the position may uncover activities that the individual is performing outside of the normal operating procedures, highlighting errors or fraudulent behavior.

Rotation of duties is a method of reducing the risk associated with a subject performing a (sensitive) task by limiting the amount of time the subject is assigned to perform the task before being moved to a different task.

The following are incorrect answers:

Key escrow is related to the protection of keys in storage by splitting the key in pieces that will be controlled by different departments. Key escrow is the process of ensuring a third party maintains a copy of a private key or key needed to decrypt information. Key escrow also should be considered mandatory for most organization's use of cryptography as encrypted information belongs to the organization and not the individual; however often an individual's key is used to encrypt the information.

Separation of duties is a basic control that prevents or detects errors and irregularities by assigning responsibility for different parts of critical tasks to separate individuals, thus limiting the effect a single person can have on a system. One individual should not have the capability to execute all of the steps of a particular process. This is especially important in critical business areas, where individuals may have greater access and capability to modify, delete, or add data to the system. Failure to separate duties could result in individuals embezzling money from the company without the involvement of others.

The need-to-know principle specifies that a person must not only be cleared to access classified or other sensitive information, but have requirement for such information to carry out assigned job duties. Ordinary or limited user accounts are what most users are assigned. They should be restricted only to those privileges that are strictly required, following the principle of least privilege. Access should be limited to specific objects following the principle of need-to-know.

The principle of least privilege requires that each subject in a system be granted the most restrictive set of privileges (or lowest clearance) needed for the performance of authorized tasks. Least privilege refers to granting users only the accesses that are required to perform their job functions. Some employees will require greater access than others based upon their job functions. For example, an individual performing data entry on a mainframe system may have no need for Internet access or the ability to run reports regarding the information that they are entering into the system. Conversely, a supervisor may have the need to run reports, but should not be provided the capability to change information in the database.

Reference(s) used for this question:

Hernandez CISSP, Steven (2012-12-21). Official (ISC)2 Guide to the CISSP CBK, Third Edition ((ISC)2 Press) (Kindle Locations 10628-10631). Auerbach Publications. Kindle Edition. and

Hernandez CISSP, Steven (2012-12-21). Official (ISC)2 Guide to the CISSP CBK, Third Edition ((ISC)2 Press) (Kindle Locations 10635-10638). Auerbach Publications. Kindle Edition. and

Hernandez CISSP, Steven (2012-12-21). Official (ISC)2 Guide to the CISSP CBK, Third Edition ((ISC)2 Press) (Kindle Locations 10693-10697). Auerbach Publications. Kindle Edition. and

Hernandez CISSP, Steven (2012-12-21). Official (ISC)2 Guide to the CISSP CBK, Third Edition ((ISC)2 Press) (Kindle Locations 16338-16341). Auerbach Publications. Kindle Edition.

**NEW QUESTION 189**

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