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Exam : CISSP

Title : Certified Information Systems Security Professional (CISSP)

Version : DEMO
1. A potential problem related to the physical installation of the Iris Scanner in regards to the usage of the iris pattern within a biometric system is:
A. Concern that the laser beam may cause eye damage.
B. The iris pattern changes as a person grows older.
C. There is a relatively high rate of false accepts.
D. The optical unit must be positioned so that the sun does not shine into the aperture.

**Answer:** D

**Explanation:** Because the optical unit utilizes a camera and infrared light to create the images, sunlight can impact the aperture so it must not be positioned in direct light of any type. Because the subject does not need to have direct contact with the optical reader, direct light can impact the reader. An Iris recognition is a form of biometrics that is based on the uniqueness of a subject's iris. A camera-like device records the patterns of the iris creating what is known as Iriscode. It is the unique patterns of the iris that allow it to be one of the most accurate forms of biometric identification of an individual. Unlike other types of biometrics, the iris rarely changes over time. Fingerprints can change over time due to scarring and manual labor, voice patterns can change due to a variety of causes, hand geometry can also change as well. But barring surgery or an accident it is not unusual for an iris to change. The subject has a high-resolution image taken of their iris and this is then converted to Iriscode. The current standard for the Iriscode was developed by John Daugman. When the subject attempts to be authenticated an infrared light is used to capture the iris image and this image is then compared to the Iriscode. If there is a match the subject's identity is confirmed. The subject does not need to have direct contact with the optical reader so it is a less invasive means of authentication than retinal scanning would be.


The following answers are incorrect: Concern that the laser beam may cause eye damage. The optical readers do not use laser so, concern that the laser beam may cause eye damage is not an issue.
The iris pattern changes as a person grows older. The question asked about the physical installation of the scanner, so this was not the best answer. If the question would have been about long term problems then it could have been the best choice. Recent research has shown that Irises actually do change over time: http://www.nature.com/news/ageing-eyes-hinder-biometrics-cans-110722

There is a relatively high rate of false accepts. Since the advent of the Iriscode there is a very low rate of false accepts, in fact the algorithm used has never had a false match. This all depends on the quality of the equipment used but because of the uniqueness of the iris even when comparing identical twins, iris patterns are unique.

2. 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 item's need to know

**Answer:** B

**Explanation:** The following is the correct answer the item's classification and category set.
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 categories the object belongs to. This is NOT the best answer.


3. Which of the following is true about Kerberos?
A. It utilizes public key cryptography.
B. It encrypts data after a ticket is granted, but passwords are exchanged in plain text.
C. It depends upon symmetric ciphers.
D. It is a second party authentication system.

Answer: C

Explanation: Kerberos depends on secret keys (symmetric ciphers). Kerberos is a third party authentication protocol. It was designed and developed in the mid 1980's by MIT. It is considered open source but is copyrighted and owned by MIT. It relies on the user's secret keys. The password is used to encrypt and decrypt the keys.

The following answers are incorrect: It utilizes public key cryptography. Is incorrect because Kerberos depends on secret keys (symmetric ciphers).

It encrypts data after a ticket is granted, but passwords are exchanged in plain text. Is incorrect because the passwords are not exchanged but used for encryption and decryption of the keys.

It is a second party authentication system. Is incorrect because Kerberos is a third party authentication system, you authenticate to the third party (Kerberos) and not the system you are accessing.


4. Which of the following is needed for System Accountability?
A. Audit mechanisms.
B. Documented design as laid out in the Common Criteria.
C. Authorization.
D. Formal verification of system design.

Answer: A

Explanation: Is a means of being able to track user actions. Through the use of audit logs and other tools the user actions are recorded and can be used at a later date to verify what actions were performed. Accountability is the ability to identify users and to be able to track user actions.

The following answers are incorrect: Documented design as laid out in the Common Criteria. Is incorrect because the Common Criteria is an international standard to evaluate trust and would not be a factor in System Accountability.

Authorization. Is incorrect because Authorization is granting access to subjects, just because you have
authorization does not hold the subject accountable for their actions. Formal verification of system design. Is incorrect because all you have done is to verify the system design and have not taken any steps toward system accountability. References: OIG CBK Glossary (page 778)

5. 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.

6. Kerberos depends upon what encryption method?
A. Public Key cryptography.
B. Secret Key cryptography.
C. El Gamal cryptography.
D. Blowfish cryptography.

**Answer: B**

**Explanation:** Kerberos depends on Secret Keys or Symmetric Key cryptography. Kerberos a third party authentication protocol. It was designed and developed in the mid 1980's by MIT. It is considered open source but is copyrighted and owned by MIT. It relies on the user's secret keys. The password is used to encrypt and decrypt the keys. This question asked specifically about encryption methods. Encryption methods can be SYMMETRIC (or secret key) in which encryption and decryption keys are the same, or ASYMMETRIC (aka 'Public Key') in which encryption and decryption keys differ. 'Public Key' methods must be asymmetric, to the extent that the decryption key CANNOT be easily derived from the encryption key. Symmetric keys, however, usually encrypt more efficiently, so they lend themselves to encrypting large amounts of data. Asymmetric encryption is often limited to ONLY encrypting a symmetric key and other information that is needed in order to decrypt a data stream, and the remainder of the encrypted data uses the symmetric key method for performance reasons. This does not in any way diminish the security nor the ability to use a public key to encrypt the data, since the symmetric key method is likely to be even MORE secure than the asymmetric method. For symmetric key ciphers, there are basically two types: BLOCK CIPHERS, in which a fixed length block is encrypted, and STREAM CIPHERS, in which the data is encrypted one 'data unit' (typically 1 byte) at a time, in the same order it was received in. The following answers are incorrect: Public Key cryptography. Is incorrect because Kerberos depends on Secret Keys or Symmetric Key

7. A confidential number used as an authentication factor to verify a user's identity is called a:
   A. PIN
   B. User ID
   C. Password
   D. Challenge
   **Answer: A**
   **Explanation:** PIN Stands for Personal Identification Number, as the name states it is a combination of numbers.
   The following answers are incorrect: User ID This is incorrect because a Userid is not required to be a number and a Userid is only used to establish identity not verify it.
   Password. This is incorrect because a password is not required to be a number, it could be any combination of characters.
   Challenge. This is incorrect because a challenge is not defined as a number, it could be anything.

8. Individual accountability does not include which of the following?
   A. unique identifiers
   B. policies & procedures
   C. access rules
   D. audit trails
   **Answer: B**
   **Explanation:** Accountability would not include policies & procedures because while important on an effective security program they cannot be used in determining accountability.
   The following answers are incorrect:
   Unique identifiers. Is incorrect because Accountability would include unique identifiers so that you can identify the individual.
   Access rules. Is incorrect because Accountability would include access rules to define access violations.
   Audit trails. Is incorrect because Accountability would include audit trails to be able to trace violations or attempted violations.

9. 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 they
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)

10. An access control policy for a bank teller is an example of the implementation of which of the following?
A. Rule-based policy
B. Identity-based policy
C. User-based policy
D. Role-based policy

Answer: D

Explanation: The position of a bank teller is a specific role within the bank, so you would implement a role-based policy.

The following answers are incorrect:
Rule-based policy. Is incorrect because this is based on rules and not the role of a bank teller so this would not be applicable for a specific role within an organization.
Identity-based policy. Is incorrect because this is based on the identity of an individual and not the role of a bank teller so this would not be applicable for a specific role within an organization.
User-based policy. Is incorrect because this would be based on the user and not the role of a bank teller so this would not be applicable for a specific role within an organization.

11. Which one of the following authentication mechanisms creates a problem for mobile users?
A. Mechanisms based on IP addresses
B. Mechanism with reusable passwords
C. One-time password mechanism.
D. Challenge response mechanism.

Answer: A

Explanation: Anything based on a fixed IP address would be a problem for mobile users because their location and its associated IP address can change from one time to the next. Many providers will assign a new IP every time the device would be restarted. For example an insurance adjuster using a laptop to file claims online. He goes to a different client each time and the address changes every time he connects to the ISP.

NOTE FROM CLEMENT:
The term MOBILE in this case is synonymous with Road Warriors where a user is constantly traveling and
changing location. With smartphone today that may not be an issue but it would be an issue for laptops or WIFI tablets. Within a carrier network the IP will tend to be the same and would change rarely. So this question is more applicable to devices that are not cellular devices but in some cases this issue could affect cellular devices as well.

The following answers are incorrect: Mechanism with reusable password. This is incorrect because reusable password mechanism would not present a problem for mobile users. They are the least secure and change only at specific interval one-time password mechanism. This is incorrect because a one-time password mechanism would not present a problem for mobile users. Many are based on a clock and not on the IP address of the user Challenge response mechanism. This is incorrect because challenge response mechanism would not present a problem for mobile users.

12. Organizations should consider which of the following first before allowing external access to their LANs via the Internet?
A. Plan for implementing workstation locking mechanisms.
B. Plan for protecting the modem pool.
C. Plan for providing the user with his account usage information.
D. Plan for considering proper authentication options.

**Answer:** D  
**Explanation:** Before a LAN is connected to the Internet, you need to determine what the access controls mechanisms are to be used, this would include how you are going to authenticate individuals that may access your network externally through access control. 
The following answers are incorrect:  
Plan for implementing workstation locking mechanisms. This is incorrect because locking the workstations have no impact on the LAN or Internet access.  
Plan for protecting the modem pool. This is incorrect because protecting the modem pool has no impact on the LAN or Internet access, it just protects the modem.  
Plan for providing the user with his account usage information. This is incorrect because the question asks what should be done first. While important your primary concern should be focused on security.

13. Kerberos can prevent which one of the following attacks?
A. Tunneling attack.  
B. Playback (replay) attack.  
C. Destructive attack.  
D. Process attack.

**Answer:** B  
**Explanation:** Each ticket in Kerberos has a timestamp and are subject to time expiration to help prevent these types of attacks.  
The following answers are incorrect:  
Tunneling attack. This is incorrect because a tunneling attack is an attempt to bypass security and access low-level systems. Kerberos cannot totally prevent these types of attacks.  
Destructive attack. This is incorrect because depending on the type of destructive attack, Kerberos cannot prevent someone from physically destroying a server.  
Process attack. This is incorrect because with Kerberos cannot prevent an authorized individuals from running processes.
14. In discretionary access environments, which of the following entities is authorized to grant information access to other people?
   A. Manager
   B. Group Leader
   C. Security Manager
   D. Data Owner

   **Answer:** D

   **Explanation:** In Discretionary Access Control (DAC) environments, the user who creates a file is also considered the owner and has full control over the file including the ability to set permissions for that file.

   The following answers are incorrect:
   - Manager is incorrect because in Discretionary Access Control (DAC) environments it is the owner/user that is authorized to grant information access to other people.
   - Group Leader is incorrect because in Discretionary Access Control (DAC) environments it is the owner/user that is authorized to grant information access to other people.
   - Security Manager is incorrect because in Discretionary Access Control (DAC) environments it is the owner/user that is authorized to grant information access to other people.

   **IMPORTANT NOTE:** The term Data Owner is also used within Classifications as well. Under the subject of classification the Data Owner is a person from management who has been entrusted with a data set that belongs to the company. For example it could be the Chief Financial Officer (CFO) who is entrusted with all of the financial data for a company. As such the CFO would determine the classification of the financial data and who can access as well. The Data Owner would then tell the Data Custodian (a technical person) what the classification and need to know is on the specific set of data.

   The term Data Owner under DAC simply means whoever created the file and as the creator of the file the owner has full access and can grant access to other subjects based on their identity.

15. What is the main concern with single sign-on?
   A. Maximum unauthorized access would be possible if a password is disclosed.
   B. The security administrator's workload would increase.
   C. The users' password would be too hard to remember.
   D. User access rights would be increased.

   **Answer:** A

   **Explanation:** A major concern with Single Sign-On (SSO) is that if a user's ID and password are compromised, the intruder would have access to all the systems that the user was authorized for.

   The following answers are incorrect:
   - The security administrator's workload would increase. Is incorrect because the security administrator's workload would decrease and not increase. The admin would not be responsible for maintaining multiple user accounts just the one.
   - The users' password would be too hard to remember. Is incorrect because the users would have less passwords to remember.
   - User access rights would be increased. Is incorrect because the user access rights would not be any different than if they had to log into systems manually.

16. Who developed one of the first mathematical models of a multilevel-security computer system?
A. Diffie and Hellman.
B. Clark and Wilson.
C. Bell and LaPadula.
D. Gasser and Lipner.

**Answer:** C

**Explanation:** In 1973 Bell and LaPadula created the first mathematical model of a multi-level security system.

The following answers are incorrect: Diffie and Hellman. This is incorrect because Diffie and Hellman was involved with cryptography. Clark and Wilson. This is incorrect because Bell and LaPadula was the first model. The Clark-Wilson model came later, 1987 Gasser and Lipner. This is incorrect, it is a distractor. Bell and LaPadula was the first model.

17. 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:

18. Which of the following would constitute the best example of a password to use for access to a system by a network administrator?
A. holiday
B. Christmas12
C. Jenny
D. GyN19Za!
Answer: D
Explanation: GyN19Za! would be the best answer because it contains a mixture of upper and lower case characters, alphabetic and numeric characters, and a special character making it less vulnerable to password attacks.
All of the other answers are incorrect because they are vulnerable to brute force or dictionary attacks. Passwords should not be common words or names. The addition of a number to the end of a common word only marginally strengthens it because a common password attack would also check combinations of words: Christmas23 Christmas123 etc...

19. What physical characteristic does a retinal scan biometric device measure?
A. The amount of light reaching the retina
B. The amount of light reflected by the retina
C. The pattern of light receptors at the back of the eye
D. The pattern of blood vessels at the back of the eye
Answer: D
Explanation: The retina, a thin nerve (1/50th of an inch) on the back of the eye, is the part of the eye which senses light and transmits impulses through the optic nerve to the brain - the equivalent of film in a camera. Blood vessels used for biometric identification are located along the neural retina, the outermost of retina's four cell layers.
The following answers are incorrect: The amount of light reaching the retina The amount of light reaching the retina is not used in the biometric scan of the retina. The amount of light reflected by the retina The amount of light reflected by the retina is not used in the biometric scan of the retina.
The pattern of light receptors at the back of the eye This is a distractor
The following reference(s) were/was used to create this question:
Reference: Retina Scan Technology.
ISC2 Official Guide to the CBK, 2007 (Page 161)

20. The Computer Security Policy Model the Orange Book is based on is which of the following?
A. Bell-LaPadula
B. Data Encryption Standard
C. Kerberos
D. Tempest
Answer: A