Roll No. | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 07

BCA (Sem.6)

INFORMATION SECURITY

Subject Code :UGCA 1948

M.Code : 91695

Date of Examination : 07-05-2024

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. **Answer briefly**

   a) What are different types of Firewalls?

   b) Define Virus.

   c) List various security laws.

   d) What are models of security?

   e) What are uses of Encryption?

   f) Define Intrusion Detection Systems.

   g) Explain User Authentication.

   h) What is the difference between Security and Privacy?

   i) What is public and private key?

   j) Define E-mail Spoofing.

SECTION-B

2. What are Attacks and Threats? Explain about various mechanisms by which organizations can protect from them.

3. What are the legal privacy and ethical issues in computer security?

4. What is Cryptography? Explain the concept of Data Encryption Standard (DES) in detail.

5. What is Information Security? What is its need? Explain various principles of information security.

6. Explain the need for database security. What is database access controls in DBMS?

7. a) What is Authentication? Explain in detail how password-based and addressed-based authentication services work?

   b) Explain Relationship between Digital Signature and Digital Certificate.

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Total No. of Questions : 07

Total No. of Pages : 02

BCA (Sem.–6)

INFORMATION SECURITY

Subject Code : UGCA1948

M.Code : 91695

Date of Examination: 11-01-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. Write briefly:

a) Explain symmetric key cryptography.

b) What are non-malicious program errors?

c) Discuss user Authentication.

d) Who is considered as an intruder?

e) Write a short note on IDS.

f) Define Decryption using example.

g) What is the difference between passive and active security threats?

h) What is considered as sensitive data?

i) What do we mean by risk analysis in administering security?

j) Define data integrity and confidentiality.

SECTION-B

2. Explain RSA algorithm with suitable example. Discuss difference between Substitution cipher and transposition cipher techniques.

3. What is the significance of assurance in the implementation of trusted operating systems? Provide an example of a real-world application where a trusted operating system with high assurance is crucial.

4. What is the role of a firewall in network security? How does a firewall filter incoming and outgoing network traffic to protect against unauthorized access and attacks? Provide examples of scenarios where firewalls are particularly effective.

5. What are the key challenges organizations faces when integrating databases from different sources or platforms? Explain multilevel database.

6. How do you establish and enforce a security policy within an organization? What issues security planning must address? Discuss Legal privacy and ethical issues in Computer security.

7. Discuss the role of operating systems in ensuring the security of computer systems. Describe security mechanisms used in operating systems. How are virus different from malicious code?

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Total No. of Questions : 07

BCA (Sem.–6)

INFORMATION SECURITY

Subject Code : UGCA1948

M.Code : 91695

Date of Examination : 29-05-2025

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. **Write briefly:**

a) Explain the basic function of the DES algorithm in encryption.

b) What are the key characteristics of a "good" encryption algorithm?

c) What are viruses, and how do they differ from other forms of malicious code?

d) What is the role of intrusion detection systems (IDS) in securing networks?

e) What makes a network Vulnerable?

f) What is multilevel security?

g) How does secure email encryption protect the confidentiality of communications?

h) What is the role of an organization's security policy?

i) What are the roles of employee?

j) What are the some common examples of cybercrimes?

SECTION-B

2. a) What is computer security and why is it essential for protecting digital assets?

b) What is elementary cryptography and how does it contribute to securing communications and data?

3. a) Discuss the role of digital signatures in public key cryptography and their importance in verifying identities.

b) What are non-malicious program errors and how can they potentially lead to security vulnerabilities in software systems?

4. a) Explain the concept of file protection mechanisms in an operating system. How do they prevent unauthorized access to critical system files?

b) What are the key principles behind designing a trusted operating system, and what features are essential for its security?

5. a) What are sensitive data types in databases and why is their protection critical for maintaining privacy and T security?

b) What is a firewall and how does it help in securing a network from unauthorized access?

6. a) Explain the process of risk analysis in security management. How does it help organizations assess vulnerabilities and mitigate potential threats?

b) What ethical issues arise in computer security, and how should professionals address these issues in their work?

7. Analyze a famous case of data breach (e.g., Equifax or Target) and explain how the breach could have been avoided with proper security planning.

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