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Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD)
Re-accredited with 'A++' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India
Continuous Internal Assessment II – October 2025
IV SEMESTER

Class: III UG
Major: Computer Applications

Time : 2 Hours
Max Marks: 60

23BCADE2 Cyber Security

Course Outcomes:

- CO1: Identify various types of cybercrime, tools used for gathering information about target.
CO2: Assess different types of cyber-attacks, threats and the motives behind them
CO3: Realize the cyber security tools to be precautions.
CO4: Analyze the defense techniques suitable for the system.
CO5: Apply the cryptographic techniques for securing the systems.

Part – A

6x 1=6

Choose the correct answer

1. Digital signatures provide CO3 K1
 - a) Confidentiality only
 - b) Integrity and Authentication
 - c) Availability
 - d) Encryption of files only
2. Authentication in cyber security means CO3 K1
 - a) Ensuring data confidentiality
 - b) Verifying the identity of a user or system
 - c) Protecting against malware
 - d) Encrypting network traffic
3. Brute force attack is also known as CO4 K1
 - a) Dictionary Attack
 - b) Exhaustive Key Search
 - c) Man-in-the-Middle Attack
 - d) Phishing Attack
4. Steganography is the technique of CO4 K1
 - a) Encrypting data using a key
 - b) Hiding data inside another file (image, audio, or video)
 - c) Digitally signing a message
 - d) Hashing data
5. Host-Based IDS monitors CO5 K1
 - a) Network traffic only
 - b) Logs and activities on a single host
 - c) Firewall rules only
 - d) Internet connections only
6. A honeypot is CO5 K1
 - a) A firewall device
 - b) A decoy system designed to attract attackers
 - c) A type of antivirus
 - d) A virus detection algorithm

Part- B

3x6=18

Answer ALL Questions

Each answer should not exceed 400 words or two pages

7. a. Explain the concept of antivirus software and discuss its importance in protecting computer systems from malware. CO3 K2
(or)
7. b. Explain the common cyber security challenges faced by organizations, with suitable examples CO3 K1
8. a. Describe how cryptography is applied to secure communication. Provide examples of symmetric and asymmetric encryption techniques. CO4 K3
(or)
8. b. How can steganography be applied to secure confidential information? Provide an example of hiding a message in an image or audio file. CO4 K3

9. a. Define a honeypot in cyber security and explain its purpose. Illustrate with an example of how it can be used to detect or study attacks. CO5 K3
(or)
9. b. How can an Intrusion Prevention System (IPS) be implemented to protect a network from attacks? Provide an example scenario illustrating its operation. CO5 K2

Part-C

3x12=36

Answer ALL questions

Each answer should not exceed 800 words or four pages

10. a. Discuss the effectiveness of digital signatures in preventing fraud and cyber-attacks. Discuss advantages, limitations, and provide a real-world example. CO3 K4
(or)
10. b. Explain how substitution techniques work in cryptography. Illustrate with a simple example CO3 K2
11. a. Explain how DES works for encrypting and decrypting data. Include a simple example of encryption process. CO4 K2
(or)
11. b. i) Explain how a brute force attack works and why it is considered a threat to encryption systems (6).
ii) Explain the main design principles of a block cipher with example (6). CO4 K3
12. a. Discuss the purpose of a firewall in network security and discuss the various types of firewalls with example in detail. CO5 K3
(or)
12. b. Briefly explain the purpose of an Intrusion Detection System with its different types with example CO5 K3

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Staff-In-Charge: Dr.D.Ambika