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(FOR THE CANDIDATES ADMITTED
DURING THE ACADEMIC YEAR 2022 ONLY)

22UBC6E6

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : MAY-2025

B.C.A **MAXIMUM MARKS: 50**

SEMESTER VI **TIME : 3 HOURS**

PART - III
INFORMATION SECURITY

SECTION - A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.
MULTIPLE CHOICE QUESTIONS. (K1)

1. Which type of attack involves unauthorized access to a system to gather information or cause harm?
   a) Denial of Service b) Malware attack c) Man-in-the-middle attack d) Intrusion
2. The main limitation of symmetric key algorithms is that both the sender and receiver must securely share the _____.
   a) Plaintext b) Public key c) Private key d) Secret key
3. Which type of malicious software is designed to replicate itself and spread to other computers?
   a) Trojan b) Worm c) Spyware d) Ransomware

3. _____ refers to the rise in technology that could introduce new vulnerabilities or security concerns in software.
   a) Technical trends b) Implementation flaws
   c) Secure development practices d) Software performance issues

5. In the Indian perspective, the Information Technology Act (2000) deals with:_____.
   a) Preventing terrorism b) Regulating mobile code
   c) Cybercrime and electronic commerce d) Regulating the stock market

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES. (K2)

6. Differentiate between plaintext and ciphertext.
7. Define Symmetric Key Cryptography.
8. How does Distributed Denial of Service (DDoS) attack work?
9. Why is buffer overrun considered a critical security vulnerability?
10. List the major legal perspectives in cybersecurity.

SECTION – B (5 X 3 = 15 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) How do we apply cryptography to secure communication?

(OR)

b) Describe the difference between plain text and cipher text.

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12. a) Discuss the main differences between symmetric and asymmetric encryption algorithms.

(OR)

b) Illustrate the process of encrypting a message using AES.

13.a) Differentiate between a stateful and a stateless firewall

(OR)

b) Show the relationship between malware and social engineering in a cyberattack**.**

14. a) Compare hackers, crackers and attackers in the context of software security.

(OR)

b) Describe how defensive programming prevents software vulnerabilities**.**

15. a) Compare the Indian and global perspectives on cyber laws.

(OR)

b) Explain the importance of securing electronic voting systems against cyber-attacks.

SECTION - C (5X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K4&K5)

16. a) Evaluate the need for computer security in today's digital environment.

(OR)

b) Summarise the basic concepts of cryptography and their significance in ensuring computer security.

17. a) Analyze the differences between symmetric and asymmetric cryptography.

(OR)

b) Outline the working of the RSA algorithm in asymmetric key cryptography.

18.a) Discuss the significance of password management systems in maintaining network security.

(OR)

b) Determine the role of firewalls in defending against unauthorized access and potential cyberattacks.

19. a) Classify the common implementation flaws in software that can lead to security vulnerabilities.

(OR)

b) Judge the effectiveness of implementing secure coding practices in reducing software vulnerabilities.

20. a) Discuss the impact of mobile code security in the context of cybercrimes.

(OR)

b) Justify the need for global cooperation in combating cybercrimes.

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ETHICAL PAPER