

Section A

Q.-1. Answer the following (Attempt any three) (30)

- (1) Explain the different types of cyber threats. Discuss malware-based and non-malware-based threats with examples.
- (2) Explain encryption and decryption processes. Discuss symmetric and asymmetric encryption techniques.
- (3) Discuss the role of hash functions in cyber security. Explain their properties and applications.
- (4) Explain network security in detail. Discuss common network threats and security challenges.
- (5) Explain Intrusion Detection Systems (IDS). Discuss their types, working, advantages, and limitations.

Section B

Q.-2. Write short notes on any four of the following topics. (20)

- (1) Explain cyber security policies. Discuss their importance, components, and implementation strategies.
- (2) Describe the Information Technology Act and its relevance to cyber crime control.
- (3) Explain incident response and disaster recovery planning. Discuss their importance in cyber security management.
- (4) Explain multi-factor authentication. Discuss different authentication factors and their effectiveness in improving security.
- (5) Describe the concept of endpoint security. Explain why endpoint protection is critical in modern organizations.
- (6) Discuss compliance and standards in cyber security. Explain the importance of security standards for organizations.

Section C

Q.-3. Multiple Choice Questions (10)

(1) Which unit performs arithmetic operations?

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|-----------------|----------|
| A) Control Unit | B) ALU |
| C) Register | D) Cache |

(2) What is software?

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|--------------------------|-----------------------|
| A) Hardware instructions | B) Physical parts |
| C) Set of programs | D) Electronic circuit |

(3) Which storage has the highest speed?

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|--------|-----------|
| A) HDD | B) SSD |
| C) RAM | D) CD-ROM |

(4) What is an operating system?

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|------------------------|-----------------------|
| A) Hardware controller | B) Software interface |
| C) Memory unit | D) Input device |

(5) Which OS is open source?

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|------------|----------|
| A) Windows | B) Linux |
| C) MS-DOS | D) MacOS |

(6) Which file system is used by Windows?

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|----------|---------|
| A) EXT4 | B) NTFS |
| C) FAT32 | D) XFS |

(7) Which is a high-level language?

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|-----------------|-----------|
| A) Assembly | B) C++ |
| C) Machine Code | D) Binary |

(8) Which converts high-level language to machine code?

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|----------------|-------------|
| A) Assembler | B) Compiler |
| C) Interpreter | D) Linker |

(9) What is debugging?

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|--------------------|---------------------|
| A) Error detection | B) Error correction |
| C) Error removal | D) All of these |

(10) Which memory is non-volatile?

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|--------|-------------|
| A) RAM | B) Cache |
| C) ROM | D) Register |

Section D

Q.-4. Indicate whether the following statements are True or False

(10)

- (1) Confidentiality ensures information is accessible only to authorized users
- (2) Integrity refers to prevention of unauthorized modification of data
- (3) Authentication verifies the identity of a user
- (4) Authorization determines what resources a user can access
- (5) Encryption converts plaintext into ciphertext
- (6) Hash functions are reversible by design
- (7) Firewalls only protect against internal threats
- (8) Phishing is a social engineering attack
- (9) Brute force attack relies on guessing credentials
- (10) Disaster recovery focuses only on hardware failures
