

# Sample Questions with Answers

## Cybersecurity - Ethical Hacking

Generated on June 13, 2026 at 10:38 AM

Cybersecurity

**[NOTE] Important Note:** This PDF contains sample questions with complete answers and explanations. Visit [SolveMyQues.com](https://www.solvemyques.com) for our complete question bank, interactive tests, and detailed performance tracking!

### Question 1:

What is cybersecurity and why is it important?

#### [ANSWER] Answer & Explanation:

Cybersecurity is the practice of protecting systems, networks, and data from digital attacks, unauthorized access, and damage.

**What cybersecurity protects:**

- Confidentiality** - Ensuring data is only accessible to authorized users
- Integrity** - Maintaining accuracy and completeness of data
- Availability** - Ensuring systems and data are accessible when needed

**Why cybersecurity is critical:**

- Financial protection** - Prevents costly data breaches and ransomware
- Privacy protection** - Safeguards personal and sensitive information
- Business continuity** - Maintains operations and prevents downtime
- Regulatory compliance** - Meets legal requirements (GDPR, HIPAA, SOX)
- Reputation management** - Protects brand trust and customer confidence

**Common threats addressed:**

- Malware (viruses, ransomware, trojans)
- Phishing and social engineering attacks
- Data breaches and identity theft
- Denial of Service (DoS) attacks
- Insider threats and human error

**Real-world impact:**

Cyberattacks cost businesses an average of \$4.45 million per breach (2023). Major incidents like Equifax (147M records), Target (40M+ cards), and Colonial Pipeline (infrastructure shutdown) demonstrate the devastating consequences of inadequate cybersecurity.

**Best practices:**

- Implement defense-in-depth strategy
- Regular security awareness training
- Keep systems updated and patched
- Use strong authentication methods
- Monitor and respond to threats continuously

## Question 2:

What are the different types of malware and how do they work?

### [ANSWER] Answer & Explanation:

Malware (malicious software) is designed to damage, disrupt, or gain unauthorized access to computer systems.

**Major malware types:**

- 1. Viruses:**
  - How they work:** - Attach to legitimate files and replicate when executed
  - Spread method:** - Through infected files, email attachments, removable media
  - Example:** - ILOVEYOU virus (2000) infected 50M+ computers via email
- 2. Worms:**
  - How they work:** - Self-replicating programs that spread across networks
  - Spread method:** - Exploit network vulnerabilities without user interaction
  - Example:** - WannaCry ransomware worm (2017) affected 300k+ computers
- 3. Trojans:**
  - How they work:** - Disguise as legitimate software to trick users
  - Purpose:** - Create backdoors, steal data, or download additional malware
  - Example:** - Banking trojans that steal financial credentials
- 4. Ransomware:**
  - How they work:** - Encrypt files and demand payment for decryption key
  - Impact:** - Can paralyze entire organizations and critical infrastructure
  - Example:** - Colonial Pipeline attack (2021) disrupted US fuel supply
- 5. Spyware:**
  - How they work:** - Secretly monitor and collect user information
  - Data stolen:** - Passwords, browsing habits, personal information
  - Example:** - Keyloggers that record keystrokes
- 6. Adware:**
  - How they work:** - Display unwanted advertisements and track behavior
  - Impact:** - Slows system performance and compromises privacy

**Protection strategies:**

- Use reputable antivirus software
- Keep systems and software updated
- Avoid suspicious downloads and email attachments
- Regular system backups
- Network segmentation and access controls



## Question 3:

What is the difference between authentication and authorization?

### [ANSWER] Answer & Explanation:

Authentication and authorization are fundamental security concepts that work together to control system access.

**Authentication** - "Who are you?"

- Purpose:** - Verifies the identity of a user or system
- Process:** - User provides credentials to prove their identity
- Methods:** - Username/password, biometrics, smart cards, tokens
- Example:** - Entering your username and password to log into email

**Authorization** - "What can you do?"

- Purpose:** - Determines what resources an authenticated user can access
- Process:** - System checks user permissions against requested resources
- Methods:** - Role-based access control (RBAC), access control lists (ACLs)
- Example:** - Admin can delete files, regular user can only read them

**Key differences:**

Aspect	Authentication	Authorization
<b>Question</b>	Who are you?	What can you access?
<b>When</b>	First step	After authentication
<b>Verifies</b>	Identity	Permissions
<b>Methods</b>	Passwords, biometrics	Roles, policies
<b>Failure</b>	Access denied	Limited access

**Real-world example:**

- 1. Authentication:** - Employee badges into office building (proves identity)
- 2. Authorization:** - Badge allows access to specific floors/rooms (defines permissions)

**Multi-factor authentication (MFA):** Combines multiple authentication factors:

- **Something you know:** - Password, PIN
- **Something you have:** - Phone, token, smart card
- **Something you are:** - Fingerprint, face recognition

**Best practices:**

- Implement strong authentication (MFA)
- Follow principle of least privilege
- Regular access reviews and updates
- Separate admin and user accounts
- Monitor and log access attempts

## Question 4:

What is a firewall and how does it protect networks?

### [ANSWER] Answer & Explanation:

A firewall is a network security device that monitors and controls incoming and outgoing network traffic based on predetermined security rules.

**How firewalls work:**

- Traffic filtering** - Examines data packets and applies security rules
- Access control** - Allows or blocks traffic based on source, destination, port
- Network barrier** - Creates a protective boundary between trusted and untrusted networks
- Logging** - Records traffic patterns and security events for analysis

**Types of firewalls:**

- Packet filtering (Stateless):**
  - Function** - Examines individual packets against static rules
  - Criteria** - Source/destination IP, port numbers, protocol type
  - Pros** - Fast processing, low resource usage
  - Cons** - Cannot track connection state, limited security
- Stateful inspection:**
  - Function** - Tracks connection state and context
  - Intelligence** - Remembers previous packets in the connection
  - Security** - Better protection against sophisticated attacks
  - Example** - Allows return traffic for established connections
- Application layer (Proxy):**
  - Function** - Inspects application-specific data and protocols
  - Deep inspection** - Understands HTTP, FTP, SMTP content
  - Security** - Highest level of protection and control
  - Performance** - Slower due to detailed analysis
- Next-generation firewalls (NGFW):**
  - Features** - Combines traditional firewall with IPS, application awareness
  - Intelligence** - User identity, application control, threat intelligence
  - Integration** - Works with security information and event management (SIEM)

**Firewall deployment:**

- Network perimeter** - Between internal network and internet
- Internal segmentation** - Between network zones (DMZ, servers, workstations)
- Host-based** - Software firewall on individual devices

**Best practices:**

- Default deny policy (block all, allow specific)
- Regular rule review and cleanup
- Monitor firewall logs for threats
- Keep firmware updated
- Test firewall rules and configurations

## Question 5:

What is phishing and how can organizations protect against it?

### [ANSWER] Answer & Explanation:

Phishing is a social engineering attack where cybercriminals impersonate legitimate entities to steal sensitive information like passwords, credit card numbers, or personal data.

**How phishing works:**

- Deception** - Attackers create fake emails, websites, or messages
- Urgency** - Create false sense of urgency to bypass critical thinking
- Credential harvesting** - Trick users into entering sensitive information
- Malware delivery** - Distribute malicious attachments or links

**Common phishing types:**

- Email phishing:**
  - Method** - Mass emails impersonating banks, services, or colleagues
  - Example** - "Your account will be suspended, click here to verify"
  - Indicators** - Generic greetings, urgent language, suspicious links
- Spear phishing:**
  - Method** - Targeted attacks using personal information
  - Research** - Attackers study victims through social media, company websites
  - Example** - CEO impersonation requesting urgent wire transfer
- Whaling:**
  - Target** - High-profile executives and decision makers
  - Impact** - Access to sensitive corporate information and systems
  - Sophistication** - Highly personalized and convincing attacks
- Smishing (SMS phishing):**
  - Method** - Text messages with malicious links or requests
  - Example** - "Package delivery failed, click to reschedule"
- Vishing (Voice phishing):**
  - Method** - Phone calls impersonating legitimate organizations
  - Example** - Fake tech support requesting remote access

**Protection strategies:**

- Technical controls:**
  - Email security gateways with anti-phishing filters
  - Web filtering to block malicious websites
  - Multi-factor authentication (MFA)
  - Email authentication (SPF, DKIM, DMARC)
- User education:**
  - Regular security awareness training
  - Simulated phishing exercises
  - Clear reporting procedures for suspicious emails
  - Verification protocols for sensitive requests

**Best practices:**

- Verify sender identity through separate communication channel
- Hover over links to check actual destination
- Be suspicious of urgent or threatening language
- Never provide sensitive information via email or phone
- Keep software and browsers updated

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