Bank of Questions

Multiple-Choice Questions (MCQs)

Cyber Security

1. What is cyber security?
    - a) Protecting physical devices
    - b) Protecting digital devices, networks, and data
    - c) Protecting personal information
    - d) Protecting financial assets
2. Which of the following is a type of malware?
    - a) Firewall
    - b) IDS
    - c) Virus
    - d) Encryption
3. What is phishing?
    - a) A type of malware
    - b) A method to steal sensitive data through deceptive emails
    - c) A network security protocol
    - d) A type of firewall
4. What was the financial impact of the Maersk ransomware attack in 2017?
    - a) $100 million
    - b) $200 million
    - c) $300 million
    - d) $400 million

5. Which certification is considered entry-level in cyber security?
    - a) CISSP
    - b) CEH
    - c) CompTIA Security+
    - d) CCSP
6. Which of the following is a cyber security protection method?
    - a) Intrusion Detection and Prevention Systems (IDS & IPS)
    - b) Phishing
    - c) Malware
    - d) Data Breach
7. What is the primary goal of cyber security?
    - a) To increase power consumption
    - b) To protect digital devices, networks, and data
    - c) To reduce security measures
    - d) To operate without time constraints
8. Which of the following is NOT a type of cyber security?
    - a) Information Security (InfoSec)
    - b) Network Security
    - c) Application Security
    - d) Physical Security
9. What does GDPR stand for?
    - a) General Data Protection Regulation
    - b) Global Data Privacy Regulation
    - c) General Digital Protection Regulation
    - d) Global Data Protection Rules

10. Which of the following is a consequence of cyber attacks?
    - a) Increased customer trust
    - b) Financial losses
    - c) Improved system performance
    - d) Enhanced data security

Introduction to Embedded Systems

11. What is an embedded system?
    - a) A general-purpose computer
    - b) A specialized computer system designed for specific tasks
    - c) A type of network device
    - d) A software application
12. Which of the following is a characteristic of embedded systems?
    - a) Unlimited resources
    - b) Real-time operation
    - c) General-purpose functionality
    - d) High power consumption
13. Which industry uses embedded systems for engine control units (ECUs)?
    - a) Healthcare
    - b) Automotive
    - c) Aerospace
    - d) Industrial automation
14. What programming languages are commonly used for embedded development?
    - a) Java and Python
    - b) C and C++
    - c) Ruby and PHP
    - d) HTML and CSS

15. What is a Real-Time Operating System (RTOS)?
    - a) A system that operates without time constraints
    - b) A system that responds to inputs within strict time constraints
    - c) A system with unlimited resources
    - d) A system used for general-purpose computing
16. Which of the following is an application of embedded systems in healthcare?
    - a) Engine control units
    - b) Medical devices like pacemakers
    - c) Flight control systems
    - d) Programmable logic controllers
17. What is the role of an embedded software engineer?
    - a) Designing hardware components
    - b) Developing and maintaining software for embedded systems
    - c) Defining the overall architecture
    - d) Managing network security
18. Which of the following is a beginner-level topic in embedded systems?
    - a) Advanced Architectures
    - b) Real-Time Operating Systems (RTOS)
    - c) Microcontrollers
    - d) Artificial Intelligence
19. What is the focus of embedded hardware engineers?
    - a) Developing software
    - b) Designing and testing hardware components
    - c) Managing data security
    - d) Implementing network protocols

20. Which of the following is an advanced-level topic in embedded systems?
    - a) Microcontrollers
    - b) Programming in C
    - c) Interfacing with sensors
    - d) Optimisation Techniques

Artificial Intelligence

21. What is artificial intelligence (AI)?
    - a) A type of embedded system
    - b) The simulation of human intelligence in machines
    - c) A network security protocol
    - d) A programming language
22. Which of the following is a common application of AI?
    - a) Engine control units
    - b) Medical devices
    - c) Machine learning algorithms
    - d) Firewall systems
23. What is machine learning?
    - a) A type of malware
    - b) A method of data encryption
    - c) A subset of AI that involves training algorithms to learn from data
    - d) A network security protocol
24. Which AI certification is considered advanced-level?
    - a) CEH
    - b) CISSP
    - c) CCSP
    - d) OSCP

25. What is the primary goal of AI in embedded systems?
    - a) To increase power consumption
    - b) To integrate machine learning algorithms
    - c) To reduce security measures
    - d) To operate without time constraints
26. Which of the following is a key component of AI?
    - a) Microcontrollers
    - b) Sensors
    - c) Algorithms
    - d) Network protocols
27. What is the role of AI in healthcare?
    - a) Managing network security
    - b) Developing software
    - c) Enhancing medical devices with intelligent features
    - d) Designing hardware components
28. Which industry benefits from AI in embedded systems?
    - a) Automotive
    - b) Aerospace
    - c) Healthcare
    - d) All of the above
29. What is the focus of AI in industrial automation?
    - a) Increasing power consumption
    - b) Enhancing process control systems with intelligent algorithms
    - c) Reducing security measures
    - d) Operating without time constraints

30. Which of the following is a benefit of integrating AI into embedded systems?
    - a) Increased power consumption
    - b) Enhanced performance and efficiency
    - c) Reduced functionality
    - d) Increased complexity
31. What is the significance of AI in automotive applications?
    - a) Enhancing infotainment systems
    - b) Improving engine control units
    - c) Both a and b
    - d) None of the above
32. Which of the following is a challenge in integrating AI into embedded systems?
    - a) Limited resources
    - b) Unlimited resources
    - c) General-purpose functionality
    - d) High power consumption
33. What is the role of AI in aerospace applications?
    - a) Enhancing flight control systems
    - b) Managing network security
    - c) Developing software
    - d) Designing hardware components
34. Which of the following is a key consideration in AI for embedded systems?
    - a) Power consumption
    - b) Data security
    - c) Real-time operation
    - d) All of the above

35. What is the future potential of AI in embedded systems?
    - a) Limited applications
    - b) Expanding applications across various industries
    - c) Reduced functionality
    - d) Decreased efficiency

True/False Questions

Cyber Security

1. Cyber security involves protecting digital devices, networks, and data from cyber threats. (True/False)
2. Phishing attacks are a type of malware. (True/False)
3. The Target data breach in 2013 compromised the data of 41 million customers. (True/False)
4. Network security is a type of cyber security. (True/False)
5. The General Data Protection Regulation (GDPR) imposes fines for data breaches. (True/False)

Introduction to Embedded Systems

6. Embedded systems are designed for general-purpose computing. (True/False)
7. Real-time operation is crucial in applications where timing is critical. (True/False)
8. Microcontrollers are a fundamental component of embedded systems. (True/False)
9. Embedded systems often have unlimited resources. (True/False)
10. Embedded systems are used in automotive, healthcare, industrial automation, and aerospace industries. (True/False)

Artificial Intelligence

11. Artificial intelligence is the simulation of human intelligence in machines. (True/False)

12. Machine learning is a subset of AI. (True/False)
13. AI is commonly used in firewall systems. (True/False)
14. The primary goal of AI in embedded systems is to integrate machine learning algorithms. (True/False)
15. AI certifications include CEH, CISSP, and OSCP. (True/False)