Comprehensive Quiz on Information Technology, Computer Science, and Programming

Introduction

This document contains over 100 multiple-choice questions covering various aspects of Information Technology (IT), computer science, programming languages, networking, and more. Each question includes four answer choices, with the correct answer marked.

Questions

General IT and Computer Science

1. What does IT stand for?
    - 1. Information Technology
    - 1. Internet Technology
    - 1. Intelligent Technology
    - 1. Integrated Technology
2. What is a bit?
    - 1. A unit of data that can be 0 or 1
    - 1. A type of computer
    - 1. A programming language
    - 1. A storage device
3. How many bits are in a byte?
    - 1. 4
    - 1. 8
    - 1. 16
    - 1. 32
4. Which number system uses base-2?
    - 1. Decimal
    - 1. Hexadecimal
    - 1. Binary
    - 1. Octal
5. What does CPU stand for?
    - 1. Central Processing Unit
    - 1. Central Programming Unit
    - 1. Computer Personal Unit
    - 1. Centralized Processing Unit
6. What is the primary function of RAM?
    - 1. Long-term storage
    - 1. Temporary data storage
    - 1. Processing data
    - 1. Managing input/output devices

7. Which of the following is a non-linear data structure?
    - 1. Array
    - 1. Linked List
    - 1. Tree
    - 1. Stack
8. What is the purpose of an operating system?
    - 1. To provide security for the computer
    - 1. To manage hardware and software resources
    - 1. To create applications
    - 1. To connect to the internet
9. Which protocol is used for secure communication over the internet?
    - 1. HTTP
    - 1. FTP
    - 1. HTTPS
    - 1. SMTP
10. What does SQL stand for?
    - 1. Structured Query Language
    - 1. Simple Query Language
    - 1. Standard Query Language
    - 1. Secure Query Language

Programming Languages

1. Which language is known for its use in web development?
    - 1. Python
    - 1. JavaScript
    - 1. C++
    - 1. Java
2. Who developed the Python programming language?
    - 1. James Gosling
    - 1. Guido van Rossum
    - 1. Bjarne Stroustrup
    - 1. Dennis Ritchie
3. What type of programming paradigm does Java primarily use?
    - 1. Functional Programming
    - 1. Object-Oriented Programming
    - 1. Procedural Programming
    - 1. Logic Programming
4. Which of the following is NOT a programming language?
    - 1. JavaScript
    - 1. HTML
    - 1. Python
    - 1. Ruby
5. What is the main purpose of Java’s “Write Once, Run Anywhere” capability?
    - 1. It can run on any operating system without modification
    - 1. It requires no installation
    - 1. It can be used for mobile applications only
    - 1. It runs faster than other languages
6. Which language is primarily used for statistical analysis and data visualization?
    - 1. R

    - 1. JavaScript
    - 1. PHP
    - 1. Swift
7. In which year was the first version of C++ released?
    - 1. 1979
    - 1. 1985
    - 1. 1990
    - 1. 1995
8. What does HTML stand for?
    - 1. HyperText Markup Language
    - 1. HighText Markup Language
    - 1. Hyperlink Text Markup Language
    - 1. HyperText MultiLanguage
9. Which programming language is known for its use in artificial intelligence applications?
    - 1. JavaScript
    - 1. Python
    - 1. Ruby
    - 1. COBOL
10. What is a primary characteristic of functional programming languages?
    - 1. They use mutable data.
    - 1. They focus on functions as first-class citizens.
    - 1. They rely heavily on loops.
    - 1. They do not support recursion.

Networking Concepts

1. What does DNS stand for in networking?

    - 1. Domain Name System
    - 1. Data Network Service
    - 1. Digital Name Service
    - 1. Domain Network Service

2. Which layer of the OSI model is responsible for routing packets?

    - 1. Physical Layer
    - 1. Data Link Layer
    - 1. Network Layer
    - 1. Transport Layer

3. What is the primary function of a router in a network?

    - 1. To connect devices within a local network.
    - 1. To route traffic between different networks.
    - 1. To filter incoming traffic.
    - D) To provide wireless access.

4. Which protocol is used to send emails? – A) HTTP
   – B) FTP
   – C) SMTP
   – D) IMAP

5. What does IP stand for in networking terms?
   – A) Internet Protocol
   – B) Internal Protocol
   – C) Interconnected Protocol
   – D) Internet Provider

6. What type of attack overwhelms a server with traffic to render it unavailable?
   – A) Phishing
   – B) Ransomware
   – C) Denial-of-Service (DoS/ DDoS)
   – D) Man-in-the-Middle

7. Which device connects multiple computers within a local network?
   – A) Router
   – B) Switch
   – C) Hub
   – D) Bridge

8. What does VPN stand for?
   – A) Virtual Private Network
   – B) Variable Public Network
   – C) Verified Private Network
   – D) Virtual Protected Network

9. In which layer of the OSI model does encryption occur?
   – A) Application Layer
   – B) Transport Layer
   – C) Session Layer
   – D) Presentation Layer

10. What is an IP address?
    – A) An identifier assigned to each device connected to a network
    – B) The physical address of a computer’s hardware
    – C) The name of a website
    – D) The speed at which data travels through a network

Software Development Methodologies

1. What does Agile methodology emphasize?
   – A) Strict adherence to initial plans
   – B) Flexibility and customer collaboration
   – C) Long development cycles
   – D) Minimal customer involvement

2. In which phase of the Software Development Life Cycle (SDLC), are requirements gathered?
   – A) Design
   – B) Implementation
   – C) Requirement Analysis
   – D) Testing

3. Which methodology uses short iterations called sprints?
   – A) Waterfall
   – B) Agile
   – C) Spiral
   – D) V-Model

4. In DevOps, what does CI/CD stand for?
   – A) Continuous Integration/Continuous Deployment
   – B) Continuous Improvement/Continuous Delivery
   – C) Continuous Integration/Continuous Development
   – D) Continuous Interface/Continuous Debugging

5. Which model emphasizes risk assessment throughout development?
   – A) Waterfall
   – B) Agile
   – C) Spiral
   – D) V-Model

Cybersecurity Essentials

1. What is malware?
   – A) Malicious software designed to harm or exploit devices or networks
   – B) Software that protects against viruses
   – C) Software that encrypts data
   – D) Software that manages firewalls

2. Which type of attack attempts to trick users into revealing personal information?
   —A) DDoS
   —B) Phishing
   —C) Ransomware
   —D) Spyware

3. What does encryption do?
   —A) Makes data unreadable without a key or password
   —B) Increases file size
   —C) Makes data public
   —D) Removes data from files

4. What is the purpose of a firewall?
   —A) To speed up internet connections
   —B) To filter incoming and outgoing network traffic
   —C) To store user passwords
   —D) To manage user permissions

5. Which security practice requires multiple forms of verification?
   —A) Single Sign-On
   —B) Multi-Factor Authentication
   —C) Password Management
   —D) Data Encryption

6. The term “ransomware” refers to:
   —A) Software that captures user credentials
   —B) Malware that encrypts files and demands payment for decryption
   —C) Software that monitors user activity
   —D) Software that removes viruses

7. Which cyber attack aims to overload systems with excessive traffic?
   —A) Phishing
   —B) DDoS (Distributed Denial of Service)**
   —C) SQL Injection
   —D) Man-in-the-Middle

8. What does “social engineering” refer to in cybersecurity?
   —A) Manipulating people into revealing confidential information
   —B) Creating complex algorithms
   —C) Developing software applications
   —D) Designing secure networks

9. Which type of malware disguises itself as legitimate software?
   —A) Trojan Horse
   —B) Worm
   —C) Virus
   —D) Spyware

10. The process of identifying vulnerabilities in systems is known as:
    —A) Penetration Testing
    —B) Data Recovery
    —C) System Optimization
    —D)—Security Auditing

Emerging Technologies

1. Artificial Intelligence (AI):
   What is AI primarily concerned with?
   —A)—Creating machines that can think like humans
   —B)—Building faster computers
   —C)—Storing large amounts of data
   —D)—Connecting devices to the internet

2. Machine Learning (ML):
   ML algorithms learn from:
   —A)—Fixed datasets
   —B)—Data patterns
   —C)—User inputs only
   —D)—Random numbers

3. Deep Learning:
   Deep learning models are based on:
   —A)—Linear regression models
   —B)—Neural networks
   —C)—Decision trees
   —D)—Support vector machines

4. Blockchain Technology:
   Blockchain primarily enables:
   —A)—Centralized control over transactions
   —B)—Decentralized and secure transactions
   —C)—Faster internet speeds
   —D)—Data compression

5. Cloud Computing:
   IaaS stands for:
   —A)—Infrastructure as a Service
   —B)—Internet as a Service
   —C)—Information as a Service
   —D)—Integration as a Service

6. Internet of Things (IoT):
   IoT refers to:
   —A)—Devices connected to the internet that can communicate with each other
   —B)—Only smartphones connected to Wi-Fi
   —C)—Computers used in homes only
   —D)—Websites that track user behavior

7. Augmented Reality (AR):
   AR overlays digital information onto:
   –A)–The physical world
   –B)–Virtual environments
   –C)–Social media platforms
   –D)–Computer screens

8. Virtual Reality (VR):
   VR creates immersive environments using:
   –A)–Real-world objects
   –B)–Digital simulations
   –C)–Augmented overlays
   –D)–Text-based interfaces

9. Quantum Computing:
   Quantum computers utilize:
   –A)–Bits
   –B)–Qubits
   –C)–Hexadecimal numbers
   –D)–Transistors

10. Natural Language Processing (NLP):
    NLP enables machines to:
    –A)–Understand human language
    –B)–Perform calculations quickly
    –C)–Store large amounts of text
    –D)–Generate random text

Web Development & Databases

1. HTML stands for:
   –A)–HyperText Markup Language
   –B)–HighText Markup Language
   –C)–Hyperlink Text Markup Language
   –D)–HyperText MultiLanguage

2. CSS stands for:
   –A)–Computer Style Sheets
   –B)–Cascading Style Sheets
   –C)–Colorful Style Sheets
   –D)–Creative Style Sheets

3. JavaScript is primarily used for:
   –A)–Server-side scripting
   –B)–Client-side interactivity
   –C)–Database management
   –D)–File transfers

4. SQL stands for:
   –A)–Structured Query Language
   –B)–Simple Query Language
   –C)–Standard Query Language
   –D)–Secure Query Language

5. NoSQL databases are known for:
   –A)–Using fixed schemas
   –B)–Handling unstructured data
   –C)–Being slower than SQL databases
   –D)–Storing only text data

6. CRUD operations refer to:
   –A)–Create, Read, Update, Delete
   –B)–Compress, Resize, Upload, Download
   –C)–Calculate, Render, Update, Delete
   –D)–Create, Render, Upload, Download

7. RESTful APIs typically use which protocol?
   –A)–FTP
   –B)–HTTP/HTTPS
   –C)–SMTP
   –D)–TCP

8. The Document Object Model (DOM):
   –A)–Defines how HTML elements are structured in memory
   –B)–Is used only in server-side scripting
   –C)–Is irrelevant in modern web development
   –D)–Is not related to web technologies

9. Which database model uses tables with rows and columns?
   –A)–NoSQL
   –B)–Relational Database

–C)–Graph Database
–D)–Object-Oriented Database

10. AJAX stands for:
–Asynchronous JavaScript and XML
–Advanced JavaScript and XML
–Asynchronous JSON and XML
–Active JavaScript and XML

Advanced Cybersecurity Concepts

1. Two-factor authentication requires:
–Two different passwords
–Two forms of verification from different categories
–Two accounts to be linked
–Two separate devices

2. Phishing attacks typically use which method?
–Sending unsolicited emails requesting sensitive information
–Installing malware on user devices
–Hacking into secure servers directly
–Using brute force attacks on passwords

3. Ransomware typically does what?
–Encrypts files and demands payment for decryption
–Steals personal information without detection
–Infects systems with viruses without user knowledge
–Monitors user activity without consent

69 .Which term describes unauthorized access to computer systems?
–Hacking
–Phishing
–Spoofing
–Scamming

70 .What type of malware replicates itself across networks or systems?
–Virus
–Worms
–Trojan Horse
–Spyware

71 .What does GDPR stand for?
–General Data Protection Regulation
–Global Data Privacy Regulation
–General Digital Privacy Regulation
–Government Data Protection Regulation

72 .Which security measure helps protect against unauthorized access by requiring two forms of identification?
–Encryption
–Multi-Factor Authentication

–Firewalls
–Intrusion Detection Systems

73 .What kind of attack involves overwhelming a server with traffic from multiple sources?
–Phishing
–Man-in-the-Middle
–Distributed Denial-of-Service (DDoS)
–**SQL Injection

74 .What does “social engineering” refer to in cybersecurity contexts?
–Manipulating individuals into revealing confidential information or performing actions that compromise security
–Developing complex algorithms
–Creating secure networks
–Analyzing system vulnerabilities

Advanced Networking Concepts

75 .Which layer of the OSI model handles error detection and correction?
–Physical Layer
–Data Link Layer
–Network Layer
–Transport Layer

76 .What protocol translates domain names into IP addresses?
--DNS (Domain Name System)
--FTP (File Transfer Protocol)
--HTTP (Hypertext Transfer Protocol)
--SMTP (Simple Mail Transfer Protocol)

77 .What type of address identifies devices on a local network segment?
--MAC Address (Media Access Control)
--IP Address (Internet Protocol)
--URL Address (Uniform Resource Locator)
--DNS Address (Domain Name System)

78 .Which protocol provides secure communication over the internet by encrypting data between client and server?
--HTTP (Hypertext Transfer Protocol)
--FTP (File Transfer Protocol)
--HTTPS (Hypertext Transfer Protocol Secure)
--SMTP (Simple Mail Transfer Protocol)

79 .What device connects multiple networks together at different locations?
—Router
—Switch
—Hub
—Bridge

80 .Which network topology connects all devices to a single central hub or switch?