

Preparation Quiz for A/L ICT - 2024 Exam

by itguru.lk - Teran Subasinghe

1-10: General ICT Knowledge

Question 1: Software Categories

Which of the following is an example of system software?

- A) Microsoft Word
- B) Adobe Photoshop
- C) Linux Operating System
- D) Mozilla Firefox
- E) Google Chrome

Question 2: Data Validation

In a database management system, what type of data validation ensures that a field must be filled in?

- A) Range Check
- B) Presence Check
- C) Format Check
- D) Consistency Check
- E) Uniqueness Check

Question 3: Computer Peripherals

Which of the following is a primary function of a computer mouse?

- A) Data processing
- B) Data input
- C) Data storage
- D) Data output
- E) Data transmission

Question 4: Memory Hierarchy

Which memory is known as volatile memory?

- A) ROM
- B) Hard Disk
- C) RAM
- D) SSD
- E) CD-ROM

Question 5: HTML and CSS Basics

Which HTML tag is used to define an unordered list?

- A) ``
- B) ``
- C) ``
- D) `<dl>`
- E) `<p>`

Question 6: Programming

What is the output of the following Python code snippet?

```
x = 5  
y = 10  
print(x + y)
```

- A) 510
- B) 15
- C) 5
- D) 10
- E) 50

Question 7: Database Management

Which SQL statement is used to delete data from a database?

- A) DELETE
- B) REMOVE
- C) DROP
- D) ERASE
- E) CLEAR

Question 8: System Development Methodologies

Which of the following is a phase in the Systems Development Life Cycle (SDLC)?

- A) Planning
- B) Coding
- C) Hacking
- D) Marketing
- E) Testing

Question 9: Logical and Flowchart Design

In flowchart symbols, which symbol represents a decision?

- A) Oval
- B) Rectangle
- C) Diamond
- D) Parallelogram
- E) Circle

Question 10: Web Development

Which of the following CSS properties is used to change the text color of an element?

- A) `font-size``
- B) `text-align``
- C) `color``
- D) `background-color``
- E) `font-weight``

11-20: Advanced Topics

Question 11: Networking Basics

Which of the following is a private IP address?

- A) 8.8.8.8
- B) 192.168.1.1
- C) 172.217.11.14
- D) 203.0.113.0
- E) 150.158.1.1

Question 12: Operating Systems

Which of the following is NOT a function of an operating system?

- A) Memory management
- B) Data encryption
- C) Process scheduling
- D) File system management
- E) Network management

Question 13: Data Structures

Which data structure uses LIFO (Last In, First Out) principle?

- A) Queue
- B) Stack
- C) Linked List
- D) Tree
- E) Graph

Question 14: Object-Oriented Programming

In object-oriented programming, which of the following best defines polymorphism?

- A) Encapsulation of data
- B) Inheritance of properties
- C) Overloading of functions
- D) Restriction of access
- E) Abstraction of data

Question 15: Cybersecurity

Which of the following is considered a social engineering attack?

- A) Phishing
- B) Virus
- C) Worm
- D) Trojan
- E) Spyware

Question 16: Software Development

Which software development model is known for its flexibility and iterative nature?

- A) Waterfall
- B) Agile
- C) V-Model
- D) Spiral
- E) RAD (Rapid Application Development)

Question 17: Cloud Computing

Which of the following is a type of cloud service model?

- A) SaaS (Software as a Service)
- B) PaaS (Platform as a Service)
- C) IaaS (Infrastructure as a Service)
- D) All of the above
- E) None of the above

Question 18: Database Design

Which of the following is used to uniquely identify a record in a table?

A/L ICT Revision - itguru.lk

- A) Foreign Key
- B) Primary Key
- C) Unique Key
- D) Composite Key
- E) Index

Question 19: Web Technologies

Which protocol is used to transfer web pages from a server to a client browser?

- A) FTP
- B) HTTP
- C) SMTP
- D) SNMP
- E) SSH

Question 20: Information Systems

Which type of information system is used for decision-making at the managerial level?

- A) Transaction Processing System (TPS)
- B) Management Information System (MIS)
- C) Decision Support System (DSS)
- D) Executive Information System (EIS)
- E) Office Automation System (OAS)

21-30: Programming and Algorithms

Question 21: Python Basics

What will be the output of the following Python code?

```
print(type(5/2))
```

- A) `<class 'int'>`
- B) `<class 'float'>`
- C) `<class 'str'>`
- D) `<class 'bool'>`
- E) `<class 'complex'>`

Question 22: JavaScript

Which of the following is used to define a variable in JavaScript?

- A) var
- B) let
- C) const
- D) All of the above
- E) None of the above

Question 23: Algorithms

What is the time complexity of binary search in a sorted array?

- A) $O(n)$
- B) $O(n^2)$
- C) $O(\log n)$
- D) $O(1)$
- E) $O(n \log n)$

Question 24: HTML5

Which of the following is a new input type introduced in HTML5?

- A) text
- B) password
- C) email
- D) radio
- E) checkbox

Question 25: CSS Flexbox

Which CSS property is used to define the alignment of items along the main axis in a flex container?

- A) `align-items`
- B) `justify-content`
- C) `flex-direction`
- D) `flex-wrap`
- E) `align-content`

Question 26: Data Types

Which data type is typically used to store true/false values?

- A) Integer
- B) Float
- C) String
- D) Boolean
- E) Character

Question 27: SQL Queries

Which SQL clause is used to filter records?

- A) WHERE
- B) FROM
- C) SELECT
- D) GROUP BY
- E) ORDER BY

Question 28: Networks

Which of the following topologies has a single central cable to which all network devices are connected?

- A) Star
- B) Ring
- C) Bus
- D) Mesh
- E) Hybrid

Question 29: Logic Gates

Which logic gate outputs true only when both inputs are true?

- A) OR
- B) AND
- C) NOT
- D) XOR
- E) NAND

Question 30: Operating Systems

Which of the following is an example of an open-source operating system?

- A) Windows
- B) macOS
- C) Linux
- D) Unix
- E) DOS

31-40: Hardware and Networking

Question 31: CPU Components

Which component of the CPU is responsible for performing arithmetic and logical operations?

- A) Control Unit (CU)
- B) Arithmetic Logic Unit (ALU)
- C) Memory Unit
- D) Register
- E) Cache

Question 32: Storage Devices

Which of the following is an example of non-volatile memory?

- A) RAM
- B) Cache
- C) ROM
- D) Registers
- E) CPU

Question 33: IP Addressing

Which of the following is a valid IPv6 address?

- A) 192.168.0.1
- B) 255.255.255.0
- C) fe80::1
- D) 127.0.0.1
- E) 10.0.0.1

Question 34: Wireless Networking

What does the acronym Wi-Fi stand for?

- A) Wireless Fidelity
- B) Wide Field
- C) Wireless Field
- D) Wired Fidelity
- E) Wide Fidelity

Question 35: Network Devices

Which device is used to connect multiple devices on a local network and manage their data traffic?

- A) Router
- B) Switch
- C) Modem
- D) Hub
- E) Access Point

Question 36: Cybersecurity

Which of the following is used to prevent unauthorized access to a network?

- A) Firewall
- B) Antivirus
- C) Spyware
- D) Adware
- E) Rootkit

Question 37: Data Communication

Which of the following is the fastest wired communication medium?

- A) Twisted Pair
- B) Coaxial Cable
- C) Optical Fiber
- D) Ethernet
- E) Satellite

Question 38: Cloud Storage

Which of the following is a popular cloud storage service?

- A) OneDrive
- B) Dropbox
- C) Google Drive
- D) All of the above
- E) None of the above

Question 39: Computer Architecture

Which of the following architectures uses a single data path for both instructions and data?

- A) Von Neumann
- B) Harvard
- C) Superscalar
- D) SIMD
- E) MIMD

41-50: Advanced Topics and Practical Applications

Question 41: Programming Languages

Which of the following is not a statically typed language?

- A) Java
- B) C++
- C) Python
- D) C#
- E) Swift

Question 42: Data Encryption

Which of the following is a symmetric key encryption algorithm?

- A) RSA
- B) AES
- C) Diffie-Hellman
- D) ECC
- E) DSA

Question 43: Software Testing

Which type of testing is performed without executing the actual code?

- A) Unit Testing
- B) Integration Testing
- C) Static Testing
- D) System Testing
- E) Regression Testing

Question 44: Database Management

What is the purpose of normalization in a database?

- A) To increase redundancy
- B) To remove anomalies
- C) To merge tables
- D) To create indexes
- E) To back up data

Question 45: Artificial Intelligence

Which of the following is an example of a supervised learning algorithm?

- A) K-means
- B) Decision Tree
- C) Apriori
- D) PCA
- E) DBSCAN

Question 46: Network Protocols

Which of the following protocols is used for secure communication over the Internet?

- A) HTTP
- B) FTP
- C) Telnet
- D) HTTPS
- E) SMTP

Question 47: Software Engineering

Which software development life cycle model is also known as the "V-Model"?

- A) Waterfall
- B) Spiral
- C) Iterative
- D) Verification and Validation
- E) Agile

Question 48: Big Data

Which of the following technologies is used for distributed storage and processing of large data sets?

- A) MySQL
- B) Hadoop
- C) PostgreSQL
- D) MongoDB
- E) Redis

Question 49: Internet of Things (IoT)

Which of the following is a key characteristic of IoT devices?

- A) High power consumption
- B) Limited connectivity
- C) Autonomous data exchange
- D) Manual configuration
- E) Limited scalability

Question 50: Ethics in IT

Which of the following is considered an ethical issue in IT?

- A) Hacking into systems
- B) Using strong passwords
- C) Regular software updates
- D) Efficient coding practices
- E) Cloud storage usage

Answers of Preparation Quiz for A/L ICT - 2024 Exam by itguru.lk - Teran Subasinghe

1-10: General ICT Knowledge

Question 1: Software Categories

Answer: C) Linux Operating System

- **Explanation:** System software includes operating systems like Linux that manage hardware and provide services for application software.

Question 2: Data Validation

Answer: B) Presence Check

- **Explanation:** A presence check ensures that a field is not left blank and must be filled in with data.

Question 3: Computer Peripherals

Answer: B) Data input

- **Explanation:** A computer mouse is used to input data by pointing, clicking, and dragging.

Question 4: Memory Hierarchy

Answer: C) RAM

- **Explanation:** RAM (Random Access Memory) is volatile memory, meaning it loses its data when the power is turned off.

Question 5: HTML and CSS Basics

**Answer: A) **

- **Explanation:** The tag in HTML is used to create an unordered list.

Question 6: Python Programming

Answer: B) 15

- **Explanation:** The code `print(x + y)` adds the values of x (5) and y (10) resulting in 15.

Question 7: Database Management

Answer: A) DELETE

- **Explanation:** The DELETE statement in SQL is used to remove records from a table.

Question 8: System Development Methodologies

Answer: A) Planning

- **Explanation:** Planning is the first phase in the Systems Development Life Cycle (SDLC).

Question 9: Logical and Flowchart Design

Answer: C) Diamond

- **Explanation:** The diamond symbol in flowcharts is used to represent a decision point.

Question 10: Web Development

Answer: C) color

- **Explanation:** The color property in CSS is used to set the text color of an element.

11-20: Advanced Topics

Question 11: Networking Basics

Answer: B) 192.168.1.1

- **Explanation:** 192.168.1.1 is a private IP address used within a local network.

Question 12: Operating Systems

Answer: B) Data encryption

- **Explanation:** Data encryption is not a primary function of an operating system; it is typically handled by specific encryption software or features.

Question 13: Data Structures

Answer: B) Stack

- **Explanation:** A stack follows the Last In, First Out (LIFO) principle, where the last element added is the first to be removed.

Question 14: Object-Oriented Programming

Answer: C) Overloading of functions

- **Explanation:** Polymorphism in object-oriented programming allows methods to be used in different ways, such as overloading functions to perform different tasks.

Question 15: Cybersecurity

Answer: A) Phishing

- **Explanation:** Phishing is a social engineering attack where attackers trick individuals into revealing sensitive information.

Question 16: Software Development

Answer: B) Agile

- **Explanation:** Agile is known for its flexibility and iterative approach to software development, allowing for rapid adjustments.

Question 17: Cloud Computing

Answer: D) All of the above

- **Explanation:** SaaS, PaaS, and IaaS are all types of cloud service models providing different levels of service.

Question 18: Database Design

Answer: B) Primary Key

- **Explanation:** A primary key uniquely identifies each record in a database table.

Question 19: Web Technologies

Answer: B) HTTP

- **Explanation:** HTTP (HyperText Transfer Protocol) is used to transfer web pages from a server to a client browser.

Question 20: Information Systems

Answer: C) Decision Support System (DSS)

- **Explanation:** A DSS is used for decision-making at the managerial level, providing relevant information and analytical tools.

21-30: Programming and Algorithms

Question 21: Python Basics

Answer: B) <class 'float'>

- **Explanation:** In Python, the result of dividing two integers is a float, so `type(5/2)` returns `<class 'float'>`.

Question 22: JavaScript

Answer: D) All of the above

- **Explanation:** `var`, `let`, and `const` are all used to define variables in JavaScript with different scopes and characteristics.

Question 23: Algorithms

Answer: C) $O(\log n)$

- **Explanation:** The time complexity of binary search is $O(\log n)$ because it divides the search interval in half with each step.

Question 24: HTML5

Answer: C) email

- **Explanation:** HTML5 introduced new input types like email to improve form validation and user input experience.

Question 25: CSS Flexbox

Answer: B) justify-content

- **Explanation:** The justify-content property in CSS is used to align items along the main axis of a flex container.

Question 26: Data Types

Answer: D) Boolean

- **Explanation:** Boolean data types are used to store true or false values.

Question 27: SQL Queries

Answer: A) WHERE

- **Explanation:** The WHERE clause in SQL is used to filter records based on specified conditions.

Question 28: Networks

Answer: C) Bus

- **Explanation:** In a bus topology, all devices are connected to a single central cable.

Question 29: Logic Gates

Answer: B) AND

- **Explanation:** The AND gate outputs true only when both of its inputs are true.

Question 30: Operating Systems

Answer: C) Linux

- **Explanation:** Linux is an open-source operating system that is freely available and modifiable by anyone.

31-40: Hardware and Networking

Question 31: CPU Components

Answer: B) Arithmetic Logic Unit (ALU)

- **Explanation:** The ALU performs arithmetic and logical operations within the CPU.

Question 32: Storage Devices

Answer: C) ROM

- **Explanation:** ROM (Read-Only Memory) is non-volatile and retains data even when the power is turned off.

Question 33: IP Addressing

Answer: C) fe80::1

- **Explanation:** fe80::1 is a valid IPv6 address, whereas the others are IPv4 addresses.

Question 34: Wireless Networking

Answer: A) Wireless Fidelity

- **Explanation:** Wi-Fi stands for Wireless Fidelity, referring to wireless local area network technology.

Question 35: Network Devices

Answer: B) Switch

- **Explanation:** A switch connects multiple devices on a local network and manages data traffic between them.

Question 36: Cybersecurity

Answer: A) Firewall

- **Explanation:** A firewall is used to prevent unauthorized access to or from a network.

Question 37: Data Communication

Answer: C) Optical Fiber

- **Explanation:** Optical fiber is the fastest wired communication medium, transmitting data as light signals.

Question 38: Cloud Storage

Answer: D) All of the above

- **Explanation:** OneDrive, Dropbox, and Google Drive are all popular cloud storage services.

Question 39: Computer Architecture

Answer: A) Von Neumann

- **Explanation:** The Von Neumann architecture uses a single data path for both instructions and data.

Question 40: Programming Languages

Answer: C) Python

- **Explanation:** Python is dynamically typed, meaning variables do not require explicit declaration of their type.

41-50: Advanced Topics and Practical Applications

Question 41: Programming Languages

Answer: C) Python

- **Explanation:** Python is dynamically typed, allowing variable types to be inferred and changed at runtime.

Question 42: Data Encryption

Answer: B) AES

- **Explanation:** AES (Advanced Encryption Standard) is a symmetric key encryption algorithm used widely for data security.

Question 43: Software Testing

Answer: C) Static Testing

- **Explanation:** Static testing involves examining the code and documentation without executing the code.

Question 44: Database Management

Answer: B) To remove anomalies

- **Explanation:** Normalization in databases is used to remove redundancy and anomalies to ensure data integrity.

Question 45: Artificial Intelligence

Answer: B) Decision Tree

- **Explanation:** Decision trees are a type of supervised learning algorithm used for classification and regression tasks.

Question 46: Network Protocols

Answer: D) HTTPS

- **Explanation:** HTTPS (HyperText Transfer Protocol Secure) is used for secure communication over the Internet.

Question 47: Software Engineering

Answer: D) Verification and Validation

- **Explanation:** The V-Model (Verification and Validation) emphasizes the relationship between development stages and their corresponding testing stages.

Question 48: Big Data

Answer: B) Hadoop

- **Explanation:** Hadoop is a technology used for distributed storage and processing of large data sets in big data applications.

Question 49: Internet of Things (IoT)

Answer: C) Autonomous data exchange

- **Explanation:** IoT devices typically feature autonomous data exchange, allowing them to communicate and operate without human intervention.

Question 50: Ethics in IT

Answer: A) Hacking into systems

- **Explanation:** Hacking into systems without authorization is an ethical and legal violation in IT.