

WAEC Digital Technology

Areas of Concentration | Based on Past Questions (2014 – 2023)

1. Computer Hardware

- Input and output devices (definitions, types, examples)
- Types of printers (impact vs. non-impact)
- Storage devices (primary, secondary, virtual memory)
- Units of storage and conversion (bits, bytes, KB, MB, GB)
- Components of the computer system (CPU, RAM, ROM, etc.)

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2. Logic Gates & Boolean Algebra

- Types of logic gates (AND, OR, NOT, NAND, NOR, XOR, XNOR)
- Truth tables for logic gates
- Logic gate outputs with given input signals
- Boolean expressions

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3. Computer Networking

- Network topologies — Star, Bus, Ring, Mesh (diagrams, advantages, disadvantages)
- Types of networks (LAN, WAN, MAN)
- Network devices (hub, switch, router, modem)
- Data transmission and transfer factors (bandwidth, baud rate, signal strength)

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4. Computer Security

- Firewall — definition, types, uses
- Encryption — definition, features, how it works
- Authentication techniques (biometrics, password)

- Methods of protecting a computer system (antivirus, firewall, password, etc.)
- Computer crimes and cybersecurity threats (hacking, phishing, virus)

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5. File Management & Data Organization

- Definition of file and record
- File organization methods (sequential, serial, random/direct, indexed-sequential)
- Basic file operations (create, delete, copy, rename, save, open, etc.)
- Data hierarchy (bit → byte → field → record → file → database)

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6. Memory & Storage Units

- Types of memory (RAM, ROM, Cache, Virtual memory)
- Differences between primary and secondary storage
- Conversion between storage units (bits, bytes, KB, MB, GB, TB)

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7. System Development Life Cycle (SDLC)

- Stages: Feasibility Study, Analysis, Design, Implementation, Testing, Maintenance
- Explanation of each stage and its purpose

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8. Program Development Life Cycle (PDLC)

- Stages: Problem definition, Algorithm design, Coding, Testing & Debugging, Documentation, Maintenance
- Flowcharts — symbols and their meanings (terminal, process, decision, input/output)
- Characteristics of a good computer program

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9. Software

- Types of software (system software, application software)
- Operating systems — functions and types
- Programming languages (machine, assembly, high-level)
- Translators (compiler, interpreter, assembler)

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10. Internet & Communication

- Internet terminology (URL, IP address, browser, email, WWW, HTTP, etc.)
- Uses and features of the internet
- Social media and e-commerce concepts
- Data transfer and communication protocols

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11. Number Systems

- Binary, Octal, Decimal, Hexadecimal
- Conversion between number systems
- Binary arithmetic (addition, subtraction)

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12. Database Management

- Definition of database and DBMS
- Types of databases
- Database operations (query, sort, filter)
- Fields, records, tables

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13. Word Processing, Spreadsheet & Presentation

- Features and functions of MS Word, MS Excel, MS PowerPoint

- Spreadsheet formulas and functions (SUM, AVERAGE, etc.)
- Mail merge

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14. Computer Maintenance & Safety

- Preventive maintenance practices
- Health and safety in computer use (ergonomics)
- Care of storage media

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■ Pro Tip

Topics like **Network Topologies, Logic Gates, SDLC/PDLC, File Management, Computer Security (Firewall & Encryption), and Storage Unit Conversions** are especially high-frequency across multiple years. Give them the most attention!

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