EXAM READY INFORMATION TECHNOLOGY

Exam Ready Information Technology

GRADE 7

Study Guide, Worked Examples and Practice Tests for Grade 7



✓ 6 units with clear key ideas, worked examples and “Watch out!” boxes
✓ 120 worked examples and 192+ practice questions at three levels
✓ 120 unit-quiz questions and 3 full mock exams (60 MCQ each)
✓ Diagnostic test · Key Facts Sheet · Top 20 Mistakes · teacher notes

Follows the units and order of the Ethiopian Grade 7 Information Technology textbook

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Exam Ready Information Technology

Grade 7 · Study Guide, Worked Examples and Practice Tests

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This is an independent study guide. It follows the units and order of the Ethiopian Grade 7 Information Technology student textbook, but it is not published or endorsed by the Ministry of Education. All explanations, examples and questions are original. Keep your textbook and your teacher's notes beside this book.

The answers were calculated and checked before printing, but no book is free of errors. If you find a mistake or disagree with an answer, please tell the author on Telegram (@Ermias_Wedaje) and it will be reviewed for the next edition.

How to Use This Book

Each unit follows the same pattern, so you always know where to look.

Key ideas
The rules and facts of the section, short and clear.

Worked examples
Step-by-step solutions. Cover the solution and try first.

⚠ Watch out!
The mistakes students make most often, and the right way.

Practice
Level 1 Basic · Level 2 Standard · Level 3 Challenge.

Unit quiz
20 multiple-choice questions in the style of the national examination.

For the Teacher
Timing, starters, misconceptions, activities and assessment.

For students

- Begin with the Diagnostic Test. It shows which units need the most work.
- Read the key ideas, then study each example with the solution covered.
- Do Level 1 and Level 2 practice for every section; try Level 3 when you are ready.
- Take each quiz in 30 minutes, mark it, and redo every question you got wrong.
- In the last weeks, learn the Key Facts Sheet and the Top 20 Mistakes page, and sit the three mock exams. Their answer keys show which unit each question comes from.

For teachers

- Each unit follows the textbook sections, so the book can sit beside your lessons.
- The “For the Teacher” page gives timing, starters, misconceptions and activities.
- The quizzes and mock exams can be used as class tests; every answer has a short reason.

For parents

- Ask your child to explain one worked example to you each day. Teaching is the best way to learn.
- Look at the quiz score after each unit, and celebrate progress, not only high marks.

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Diagnostic Test · Where Should I Start?

14 questions · 15 minutes. Take this test before you start the book. There are two questions on each unit. Your score only shows you where to spend your time.

1. Raw facts and figures are
   A. a network B. information C. software D. data
2. The class average of five marks is an example of
   A. a user B. data C. information D. hardware
3. Which is an input device?
   A. Keyboard B. Monitor C. Printer D. Speaker
4. Which is a pointing device?
   A. Mouse B. Plotter C. Speaker D. Printer
5. The software that controls the computer is
   A. system software B. a printer
   C. a keyboard D. a monitor
6. Which is an operating system?
   A. Access B. Word C. Excel D. Linux
7. The Internet is a network of
   A. programs only B. printers C. keyboards D. networks
8. Web pages are stored on
   A. speakers B. keyboards C. printers D. web servers
9. Before cleaning equipment you should
   A. spray water B. run it C. unplug it D. open the RAM
10. Safety signs in a laboratory
    A. are decorations B. cool the CPU
    C. warn people of dangers D. store data
11. A set of instructions for a computer is a
    A. port B. program C. cable D. font
12. MSW Logo has a command box and a
    A. disk B. graphics window
    C. printer D. radio
13. Home, Insert and Layout are
    A. tabs on the ribbon B. file extensions
    C. ports D. viruses
14. HT hides the
    A. turtle B. command box C. pen colour D. screen

Unit 1 · Introduction to Information and Communication Technology

By the end of this unit you will be able to:

- define ICT and explain its five basic elements
- describe the uses of ICT in daily life
- define a computer and state its functions and characteristics
- distinguish hardware from software

Before you start — check yourself. (a) What does ICT stand for? (b) Name one use of ICT in education. (c) Is a keyboard hardware or software?
Answers: (a) Information and Communication Technology (b) e-learning or searching the Internet (c) hardware

Key words: ICT · data · information · communication · technology · e-commerce · computer · hardware · software · speed

How this unit is examined

Question types that appear again and again in Ethiopian model examinations:

- ICT and Its Five Elements
- ICT in Daily Life
- The Computer
- Hardware and Software

1.1 ICT and Its Five Elements

Key ideas

- **ICT** stands for **Information and Communication Technology**. It is the use of **computers, phones, networks and other devices** to **collect, store, process, send and receive information**.
- The five basic elements are **data, information, communication, user and technology**. **Data** are raw facts and figures (for example 45, 60, 72). **Information** is data that has been **processed** so that it has meaning (for example, the average mark of a class).
- **Communication** is the sharing of information between people or devices, for example by phone call, email or message. The **user** is the person who uses ICT, and **technology** is the set of tools (hardware, software and networks) that makes ICT work.
- **Data → processing → information.** Data on their own may not help a decision; information does.

Example 1.1 — Define

What does ICT mean?

Solution. Information and Communication Technology: using technology to collect, store, process and share information.

Example 1.2 — Elements

List the five basic elements of ICT.

Solution. Data, information, communication, user and technology.

Example 1.3 — Data or information

The marks 50, 60 and 70 are given. The class average is 60. Which is data and which is information?

Solution. 50, 60, 70 are data; the average 60 is information.

Example 1.4 — Exam Booster · Process

Write the order: information, processing, data.

Solution. Data → processing → information.

Example 1.5 — Exam Booster · Identify

A student sends a voice message to a friend. Which ICT element is this?

Solution. Communication.

⚠ Watch out!

× Wrong	✓ Right
Data and information mean exactly the same.	Data are raw facts; information is processed data with meaning.
ICT is only about computers.	It also includes phones, networks, radio and TV.
The user is a type of hardware.	The user is the person who uses ICT.

Practice 1.1

Level 1 — Basic

1. Expand ICT.
2. What are raw facts called?
3. Name one ICT device besides a computer.

Level 2 — Standard

4. What is information?
5. What is communication?

6. Who is the user?

Level 3 — Challenge

7. Explain the difference between data and information with an example.
8. Describe the five elements of ICT.

1.2 ICT in Daily Life

Key ideas

- **Communication:** phone calls, SMS, email, video calls and social media let people share information quickly across the world.
- **Education:** students learn with computers, videos and the Internet (**e-learning**); teachers prepare lessons and keep student records.
- **Entertainment:** music, films, games and TV programmes are produced, stored and enjoyed using ICT.
- **E-commerce** means **buying and selling goods and services over the Internet**. Banks also use ICT for services such as ATMs and mobile banking. Other fields include health, agriculture and government services.

Example 1.6 — Use

Give two ways ICT is used in education.

Solution. E-learning and searching for information on the Internet.

Example 1.7 — E-commerce

Define e-commerce.

Solution. Buying and selling goods and services over the Internet.

Example 1.8 — Match

Match: mobile banking, video call, online film. With communication, entertainment, banking.

Solution. Mobile banking: banking; video call: communication; online film: entertainment.

Example 1.9 — Exam Booster · Benefit

State one benefit of email over a letter.

Solution. It is much faster.

Example 1.10 — Exam Booster · Field

Which ICT field helps a teacher to keep student records?

Solution. Education.

⚠ Watch out!

× Wrong	✓ Right
E-commerce means sending email.	It means buying and selling over the Internet.
ICT is not used in banks.	Banks use ATMs, mobile banking and computers.
Entertainment is not part of ICT.	Music, films and games use ICT.

Practice 1.2

Level 1 — Basic

1. Name one communication use of ICT.
2. Name one entertainment use.
3. What is e-learning?

Level 2 — Standard

4. What is e-commerce?
5. Name a bank service using ICT.
6. Name two ICT fields.

Level 3 — Challenge

7. Explain how ICT helps communication.
8. Discuss ICT in your school.

1.3 The Computer

Key ideas

- A **computer** is an **electronic device** that accepts **input**, **processes** it according to instructions, **stores** it and produces **output**. The cycle is **input → processing → output**, with **storage** along the way.
- **Functions of a computer:** accepting data (input), processing data, storing data and information, and giving results (output).
- **Characteristics: speed** (millions of operations in a second), **accuracy** (results are correct if the data and program are correct), **storage** (large amounts of data), **diligence** (does not get tired or bored), **versatility** (can do many different jobs) and **automation** (works by itself once a program is started).
- **Remember:** a computer follows instructions exactly; it cannot think by itself.

Example 1.11 — Cycle

Name the three main steps of the computer cycle.

Solution. Input, processing and output.

Unit 2 · Computer Hardware

By the end of this unit you will be able to:

- identify and describe input devices
- describe the CPU and its parts
- identify output devices
- describe primary and secondary storage and storage units

Before you start — check yourself. (a) Name two input devices. (b) What does CPU stand for? (c) How many bits are in a byte?
Answers: (a) keyboard and mouse (b) Central Processing Unit (c) 8

Key words: input device · CPU · ALU · control unit · output device · RAM · ROM · secondary storage · byte · bit

How this unit is examined

Question types that appear again and again in Ethiopian model examinations:

- Input Devices
- The CPU
- Output Devices
- Storage Devices and Units

2.1 Input Devices

Key ideas

- An **input device** sends **data and instructions into** the computer. Examples: **keyboard** (typing text and numbers), **mouse** (pointing and clicking), **scanner** (copies a paper document or photo into the computer), **touch screen** (touch with a finger), **light pen**, **barcode reader** (reads the lines on a product), **microphone** (sound) and **camera / webcam** (pictures and video).
- Input devices do not show results; they only **enter** data. The keyboard is the most common input device.
- **Pointing devices** move the pointer on the screen: mouse, touch pad, light pen and touch screen.
- **Shops** use barcode readers at the checkout; **offices** use scanners; **phones** combine a touch screen, microphone and camera.

Example 2.1 — Define

What is an input device?

Solution. A device that sends data and instructions into the computer.

Key Facts Sheet

Learn these by heart. Cover the right-hand side and say each fact from memory.

Unit 1 · Introduction to ICT

ICT = Information and Communication Technology

Five elements: data, information, communication, user, technology

Data = raw facts ; information = processed data

E-commerce = buying and selling online ; e-learning

Computer cycle: input → processing → output

Hardware = physical ; software = programs

Unit 2 · Computer hardware

Input: keyboard, mouse, scanner, microphone, webcam, barcode reader

CPU = brain: ALU (calculate, compare), control unit, registers

Output: monitor (soft copy), printer (hard copy), plotter, speaker

RAM temporary ; ROM permanent

Secondary: hard disk, CD about 700 MB, DVD, flash disk

8 bits = 1 byte ; 1 KB = 1 024 B ; ×1 024 for each step up

Unit 3 · Computer software

System software: OS, utilities, language translators

Examples of OS: Windows, Linux, macOS, Android

Application: Word, Excel, Access, PowerPoint, Paint

Word parts: title bar, ribbon, rulers, status bar

Extension .docx ; Ctrl+S save, Ctrl+P print, Ctrl+Z undo

Packaged vs custom software

Unit 4 · The Internet

Internet = network of networks ; Web = pages on it

Website = group of pages ; home page = first page

Browser views pages: Chrome, Firefox, Edge, Safari, Opera

Search engine finds pages: Google, Bing, Yahoo

URL = address typed in the address bar

.com .edu .gov .org .et ; https is secure

Unit 5 · Security and safety

Unplug before cleaning ; cool 30 minutes

Never spray liquid on the screen ; water conducts

Start: check cables, press power ; Shut down: Start → Power

Sleep resumes fast ; Sign out closes the account

Accounts: Administrator, Standard, Guest

Strong password: 8+ characters, mixed, secret

Unit 6 · LOGO

FD forward ; BK back ; RT right ; LT left

PU pen up ; PD pen down ; CS clear screen

Right angle 90° ; full turn 360°

REPEAT n [commands]

Regular shape turn = 360 ÷ sides

Procedure: TO name ... END

Mock Examination 1

60 multiple-choice questions · 90 minutes · one mark each. Circle one answer. Mark with the answer key at the back and use the unit number to see where to revise.

1. Raw facts and figures are
   A. a network B. information C. software D. data
2. Data that are processed to give meaning are
   A. information B. hardware C. raw facts D. noise
3. Which is NOT a basic element of ICT?
   A. communication B. user C. printer D. data
4. The class average of five marks is an example of
   A. a user B. data C. information D. hardware
5. Sharing information between people is
   A. booting B. communication C. storage D. processing
6. Buying goods over the Internet is
   A. e-mail only B. e-commerce C. e-reader D. e-waste
7. Learning through computers and the Internet is called
   A. e-cable B. e-printing C. e-voting D. e-learning
8. Which is an entertainment use of ICT?
   A. cooking B. keeping a paper record
   C. watching a film online D. sweeping the floor
9. Which tool is used for fast communication across the world?
   A. email B. a poster C. a paper letter D. a notice board
10. The three steps of the computer cycle are input,
    A. cutting and pasting B. printing and storing
    C. typing and copying D. processing and output
11. Which is an input device?
    A. Keyboard B. Monitor C. Printer D. Speaker
12. Which device reads product barcodes?
    A. Speaker B. Plotter C. Printer D. Barcode reader
13. A webcam is used to enter
    A. power B. pictures and video
    C. printed paper D. sound only
14. Which is a pointing device?
    A. Mouse B. Plotter C. Speaker D. Printer
15. A scanner is used to
    A. cool the CPU B. print pages
    C. play sound D. copy documents into a computer