SMARTWIZ

GRADE10 COMPUTER APPLICATIONS TECHNOLOGY (CAT) EXAM

MARKS: 100

MARKS	

TIME: 2 hours

SCHOOL _____

CLASS (e.g. 4A) _____

SURNAME _____

NAME _____

Instructions for Learners:

- Read all the instructions carefully before you begin the exam.
- Write your name and learner number clearly on the answer sheet/booklet.
- Answer all the questions unless otherwise instructed.
- Show all your work/calculations where applicable.
- Write neatly and legibly.
- Use only blue or black ink. *Do not use correction fluid or tape.*
- No electronic devices (calculators, phones, etc.) are allowed unless explicitly permitted.
- Raise your hand if you have any questions.
- Do not talk to other learners during the exam.
- Any form of cheating will lead to disqualification.

This test consists of 6 pages including the cover page.

SECTION A: COMPUTER HARDWARE AND SOFTWARE (25 marks)

Answer all questions. Write your answers on the lines provided.

1. Define the following hardware components and state one function for each:
   a) Power Supply Unit (PSU)

   _____

   _____

   _____

   (3 marks)

   b) Sound Card

   _____

   _____

   _____

   (3 marks)

   c) BIOS (Basic Input Output System)

   _____

   _____

   _____

   (3 marks)

2. Complete the table by categorizing the following devices as **Input** or **Output** devices and give one example of each device:

Device	Input / Output	Example
Touchscreen		
Printer		
Microphone		
Monitor		

(6 marks)
Write your answers below:
Input / Output and examples:

_____

_____

_____

_____
_____
_____

3. Explain what firmware is and how it differs from software. Give one example of a device that uses firmware.

_____
_____
_____
_____

(5 marks)

4. Explain why RAM is important for computer performance and what happens if the RAM is insufficient.

_____
_____
_____
_____

(5 marks)

SECTION B: FILE MANAGEMENT AND DATA ORGANISATION (20 marks)

Answer all questions. Write your answers on the lines provided.

1. Explain the concept of file hierarchy (folder structure) and how it helps users to manage files efficiently.

_____
_____
_____
_____

(6 marks)

2. Differentiate between the terms "file format" and "file extension" with examples.

_____
_____
_____

(4 marks)

3. Explain what metadata is and list three examples of metadata that can be associated with a digital photo.

_____
_____
_____
_____

(5 marks)

4. Describe the advantages and disadvantages of using external storage devices compared to cloud storage.

_____
_____
_____
_____

(5 marks)

_____

SECTION C: OFFICE APPLICATIONS (25 marks)

Answer all questions. Write your answers on the lines provided.

1. In spreadsheet software:
   a) Write a formula to calculate the total of values in cells B2 to B15.

   _____

   (3 marks)

   b) Describe what the VLOOKUP function does and provide a simple example scenario where it would be useful.

   _____
   _____
   _____

   (5 marks)

2. In word processing software:
   a) What is the difference between 'line spacing' and 'paragraph spacing'?

   _____

(4 marks)

b) Explain how you would insert a table in a Word document and list two reasons why tables are useful.

(4 marks)

3. In presentation software:
   a) List and describe three ways animations can improve a presentation.

(6 marks)

b) Name two popular file formats used to save presentations and give one advantage of each.

(3 marks)

SECTION D: DATABASES AND NETWORKING (20 marks)

Answer all questions. Write your answers on the lines provided.

1. Define the following terms related to databases:
   a) Foreign key

(3 marks)

b) Record

(2 marks)

2. Study the following network types and answer the questions in the table below:

Network Type	Typical Use Case	Speed	Range
LAN (Local Area Network)	School or Office Network	High	Small (building)
WAN (Wide Area Network)	Internet	Variable	Global
PAN (Personal Area Network)	Bluetooth devices	Low	Very small (meters)

Complete the table below:

Network Type	One advantage	One disadvantage
LAN		
WAN		
PAN		

(6 marks)
Answers:

_____

_____

_____

_____

_____

_____

3. Explain what a firewall does and why it is important in network security.

_____

_____

_____

(4 marks)

4. What does HTTP stand for and what is its role in web communication?

_____

_____

(5 marks)

_____

SECTION E: INTERNET SAFETY AND ETHICS (10 marks)

Answer all questions. Write your answers on the lines provided.

1. Define "cyberbullying" and suggest three ways to protect oneself from it online.

_____

_____
_____
_____

(5 marks)

2. What is two-factor authentication (2FA) and why is it recommended for online accounts?

_____
_____

(3 marks)

3. List two ethical practices when using digital devices and social media.

_____
_____

(2 marks)

_____

End of Exam
TOTAL: 100 marks

MEMO

SECTION A: COMPUTER HARDWARE AND SOFTWARE (25 marks)

1.

a) **Power Supply Unit (PSU)**

- Definition: Converts mains AC to low-voltage regulated DC power for the computer.
- Function: Supplies power to all components in the computer.
  (3 marks: 1 for definition, 2 for function)

b) **Sound Card**

- Definition: A hardware component that processes audio input and output.
- Function: Allows a computer to produce sound that can be heard through speakers or headphones.
  (3 marks)

c) **BIOS (Basic Input Output System)**

- Definition: Firmware that initializes and tests hardware during boot-up.
- Function: Loads the operating system from the hard drive.
  (3 marks)

2.

Device	Input / Output	Example
Touchscreen	Both (accept input, show output) (accept input accepted)	Smartphone screen
Printer	Output	Laser printer
Microphone	Input	Headset microphone
Monitor	Output	LCD monitor

(6 marks: 1 mark per column per row)

3.

- Firmware is software permanently programmed into a hardware device (e.g., embedded in ROM).
- Differs from software because firmware is low-level and controls hardware directly; software can be installed/updated.
- Example: Firmware in a router or a printer.
  (5 marks: 2 for definition, 2 for difference, 1 for example)

4.

- RAM (Random Access Memory) stores data temporarily while a computer is running.

- Important because it allows fast access to data and programs.
- Insufficient RAM causes slow performance or inability to run multiple programs smoothly (may use virtual memory).
(5 marks)

SECTION B: FILE MANAGEMENT AND DATA ORGANISATION (20 marks)

1.

- File hierarchy/folder structure is organizing files in folders and subfolders to group related data logically.
- Helps efficient searching, reduces clutter, prevents data loss, and simplifies backups.
(6 marks)

2.

- File format is the structure/standard of the file (e.g., JPEG, DOCX).
- File extension is the suffix indicating the file type (e.g., .jpg, .docx).
- Example: File format = JPEG image; extension = .jpg
(4 marks)

3.

- Metadata is data about data, providing information about a file's properties.
- Examples for a digital photo: date taken, camera model, resolution, location (GPS coordinates).
(5 marks)

4.

- Advantages of external storage: portable, no internet needed, physical control of data.
- Disadvantages: can be lost or damaged.
- Advantages of cloud storage: accessible anywhere, automatic backups, easy sharing.
- Disadvantages: requires internet, security/privacy risks.
(5 marks)

SECTION C: OFFICE APPLICATIONS (25 marks)

1.

a) Formula for total sum in B2 to B15: =SUM(B2:B15)
(3 marks)

b) VLOOKUP searches a table vertically to find data based on a key value.
Example: Lookup a student's name to find their grade in a list.
(5 marks)

2.

a) Line spacing is the space between lines within a paragraph.
Paragraph spacing is the space before or after a paragraph.
(4 marks)

b) Insert table: Use 'Insert' > 'Table' menu and specify rows and columns.
Tables organize data clearly, improve readability, and help with comparing information.
(4 marks)

3.

a) Animations can:

- Highlight key points
- Make transitions smooth
- Engage the audience
  (6 marks)

b) Common presentation file formats:

- PPTX (PowerPoint) — widely supported, editable
- PDF — universal viewing, not editable
  (3 marks)

SECTION D: DATABASES AND NETWORKING (20 marks)

1.

a) Foreign key: A field in one table that uniquely identifies a row in another table (used to link tables).
(3 marks)

b) Record: A single row in a database table containing related data fields.
(2 marks)

2.

Network Type	Advantage	Disadvantage
LAN	High speed, secure within small area	Limited range
WAN	Connects large geographical areas	Slower speeds, expensive
PAN	Convenient for personal devices	Very limited range

Network Type	Advantage	Disadvantage

(6 marks)

3.

- Firewall monitors and controls incoming and outgoing network traffic based on security rules.
- Protects against unauthorized access and cyber threats.
  (4 marks)

4.

- HTTP = HyperText Transfer Protocol
- Role: Protocol used for transferring web pages over the internet, allowing browsers and servers to communicate.
  (5 marks)

SECTION E: INTERNET SAFETY AND ETHICS (10 marks)

1.

- Cyberbullying: Using digital platforms to harass, threaten, or embarrass someone.
- Protection: Use privacy settings, block/report offenders, do not share personal info online.
  (5 marks)

2.

- Two-factor authentication (2FA) requires two types of verification (e.g., password + code sent to phone).
- Adds extra security to prevent unauthorized account access.
  (3 marks)

3.

- Ethical practices:
  - Respect others' privacy and avoid sharing harmful content.
  - Do not plagiarize or cheat online.
    (2 marks)

Total: 100 marks