

# 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 SYSTEMS AND HARDWARE (40 marks)**

Answer all questions.

1. **Explain the role of the following hardware components:**
    - a) Motherboard (3 marks)
    - b) Power Supply Unit (PSU) (3 marks)
    - c) Graphics Processing Unit (GPU) (3 marks)
  2. **What is RAM? How does increasing RAM affect computer performance?** (5 marks)
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3. **Identify and describe three types of storage devices. Include one advantage of each.** (9 marks)
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4. **Describe three factors that affect the speed of a processor.** (6 marks)
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5. **Explain what BIOS is and its function when a computer is switched on.** (4 marks)
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6. **List and briefly explain three types of printers.** (6 marks)
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**SECTION B: SOFTWARE AND OPERATING SYSTEMS (20 marks)**

1. **Differentiate between utility software and programming software. Provide two examples for each.** (8 marks)
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2. **What is a file extension? Why is it important? Give three examples of common file extensions.** (6 marks)
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3. **Explain the purpose of defragmentation in an operating system.** (6 marks)
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**SECTION C: OFFICE APPLICATIONS (20 marks)**

1. You are creating a presentation for a school project:
    - a) List five features that can make your presentation engaging. (5 marks)
    - b) Explain how to insert a hyperlink into a slide. (3 marks)
  2. In word processing software:
    - a) Describe the purpose of using styles and formatting. (4 marks)
    - b) What is mail merge used for? Provide an example situation. (4 marks)
  3. In spreadsheet software:
    - a) Explain what a formula is and provide an example calculating the average of three numbers in cells A1, A2, and A3. (4 marks)
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#### **SECTION D: DATABASES AND NETWORKING (15 marks)**

1. **What is a foreign key? How does it differ from a primary key?** (4 marks)
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2. **Name and describe two types of networks based on scale and give an example of each.** (6 marks)
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3. **Explain the importance of data backup and list two methods of backing up data.** (5 marks)
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#### **SECTION E: INTERNET, SECURITY & ETHICS (5 marks)**

1. **Explain the difference between malware and spyware.** (3 marks)
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2. **List two best practices for creating a strong password.** (2 marks)
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**End of Exam**

**TOTAL : 100**

## MEMO

### SECTION A: COMPUTER SYSTEMS AND HARDWARE (40 marks)

1. **Role of hardware components:**

- a) Motherboard: The main circuit board that connects all components of the computer. (3 marks)
- b) Power Supply Unit (PSU): Converts electrical power from an outlet to usable power for the computer's components. (3 marks)
- c) Graphics Processing Unit (GPU): Handles rendering of images, video, and animations; relieves the CPU of graphics tasks. (3 marks)

2. **RAM and performance:**

- RAM (Random Access Memory) is temporary memory used to store data and programs currently in use. (2 marks)
- Increasing RAM allows more programs to run simultaneously and improves speed because less reliance on slower storage occurs. (3 marks)

3. **Three storage devices with advantages:**

- Hard Disk Drive (HDD): Large storage capacity, relatively low cost. (3 marks)
- Solid State Drive (SSD): Faster access speeds, no moving parts. (3 marks)
- USB Flash Drive: Portable, easy to use for transferring data. (3 marks)

4. **Factors affecting processor speed:**

- Clock speed (GHz): Higher means faster processing. (2 marks)
- Number of cores: More cores allow multitasking and parallel processing. (2 marks)
- Cache size: Larger cache stores more data close to CPU for quick access. (2 marks)

5. **BIOS and its function:**

- BIOS (Basic Input/Output System) is firmware that initializes hardware during boot-up and starts the operating system. (4 marks)

6. **Types of printers:**

- Inkjet printer: Sprays ink onto paper; good for photos. (2 marks)
- Laser printer: Uses laser to produce high-quality text; faster and better for large volumes. (2 marks)
- Dot matrix printer: Impact printer good for multi-part forms. (2 marks)

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### SECTION B: SOFTWARE AND OPERATING SYSTEMS (20 marks)

1. **Utility software vs Programming software:**

- Utility software: Helps maintain and optimize computer (e.g., antivirus, disk cleanup). (4 marks)
- Programming software: Tools to write and test software (e.g., compilers, text editors). (4 marks)

2. **File extension and importance:**

- File extension identifies the file type and associated program (e.g., .docx for Word). (2 marks)
- Important because OS uses it to open the correct application. (2 marks)
- Examples: .pdf, .jpg, .xls (2 marks)

3. **Purpose of defragmentation:**

- Defragmentation reorganizes fragmented data on the hard drive to improve read/write efficiency and speed. (6 marks)

## SECTION C: OFFICE APPLICATIONS (20 marks)

1. a) Five features to make presentations engaging:
  - Use of images/graphics (1 mark)
  - Animations/transitions (1 mark)
  - Clear and concise text (1 mark)
  - Use of charts/graphs (1 mark)
  - Appropriate font styles and sizes (1 mark)
- b) Insert a hyperlink:
  - Highlight text or object, right-click and select 'Insert Hyperlink', then enter the URL or file path. (3 marks)
2. a) Styles and formatting:
  - Styles apply consistent font, color, and paragraph settings throughout a document for professional appearance. (4 marks)
- b) Mail merge use and example:
  - Mail merge automatically inserts personalized data (e.g., names and addresses) into form letters. (2 marks)
  - Example: Sending invitation letters to a list of contacts. (2 marks)
3. a) Formula explanation and example:
  - Formula: A calculation using cell references (e.g., =AVERAGE(A1:A3)) calculates the average of numbers in cells A1, A2, and A3. (4 marks)

## SECTION D: DATABASES AND NETWORKING (15 marks)

1. **Foreign key vs Primary key:**
  - Primary key: Unique identifier for a record in a table. (2 marks)
  - Foreign key: A field in one table that links to the primary key of another table. (2 marks)
2. **Types of networks based on scale:**
  - PAN (Personal Area Network): Small network for personal devices (e.g., Bluetooth connections). (3 marks)
  - WAN (Wide Area Network): Large network covering cities or countries (e.g., the Internet). (3 marks)
3. **Importance of data backup and methods:**
  - Data backup protects against data loss from hardware failure, accidental deletion, or theft. (3 marks)
  - Methods: External hard drive backup, cloud backup services. (2 marks)

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**SECTION E: INTERNET, SECURITY & ETHICS (5 marks)****1. Malware vs Spyware:**

- Malware: Malicious software designed to harm or exploit systems. (2 marks)
- Spyware: Software that secretly monitors user activity and sends data to third parties. (1 mark)

**2. Best practices for strong passwords:**

- Use a combination of letters (uppercase and lowercase), numbers, and special characters. (1 mark)
  - Avoid using easily guessable information such as names or birthdays. (1 mark)
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**End of Marking Memorandum**

**TOTAL : 100**

MYST PATHWORKS