KENYA CERTIFICATE OF BASIC EDUCATION (K.C.B.E)

GRADE 10 COMPUTER STUDIES (Theory) ENDTERM 1

PATHWAY: S.T.E.M

Time: 2 Hours

COMPETENCE ASSESSMENT EXAMINATION CKEAB 003

LEARNER'S DETAILS

Name: _____.

School: _____.

Assessment Number: _____. **Date:** _____.

School Code: _____. **Signature**: _____.

INSTRUCTIONS TO LEARNERS

1. Write your name, assessment number, class and date on all the answer sheets provided.
2. Answer all the questions in the spaces provided.
3. Use a blue or black pen for writing. Pencils should be used only for drawings and diagrams.

SCORE GRID

Question No.	1	2	3	4	5	6	7	8	TOTAL
Question Marks	10	10	10	10	10	10	10	10	80
Learner's Score									
Performance Level									

Performance Levels Grid

Level	Level	% Range	Points	Learner's score
Exceeding (EE)	EE1	90–100%	8	
	EE2	75–89%	7	
Meeting (ME)	ME1	58–74%	6	
	ME2	41–57%	5	
Approaching (AE)	AE1	31–40%	4	
	AE2	21–30%	3	
Below (BE)	BE1	11–20%	2	
	BE2	1–10%	1	

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SECTION A: Theory (80 Marks)

Answer all questions in this section.

1. A Grade 10 learner noticed that modern computers are very different from old computing machines.

a) Name **two early computing devices**. (2 marks)

i. _____

ii. _____

b) State **two principal technologies** that defined the development of computers. (2 marks)

i. _____

ii. _____

c) List **three generations of computers** and the technology associated with each. (6 marks)

	Computer generation	**Technology used**
i		
ii		
iii		

2. A learner is designing a model of a Von Neumann computer.

a) Draw and label a diagram showing the **functional elements of a Von Neumann computer**. (4 marks)

b) State the function of each of the following components: (4 marks)

i) Control Unit (CU)

_____

_____

ii) Arithmetic Logic Unit (ALU)

_____

_____

iii) Registers

_____

_____

iv) Buses

_____

_____

c) Convert the decimal number 145 to **binary, octal, and hexadecimal**. (2 marks)

Decimal number	*To binary*	*To octal*	*To hexadecimal*
145			

3. A school is upgrading its computer lab.

a) Classify the following devices as **input or output**: (5 marks)

i) Touchscreen: _____.

ii) Projector: _____.

iii) Scanner: _____.

iv) Keyboard: _____.

v) Speakers: _____.

b) Explain **two factors** to consider when selecting input and output devices for the lab. (4 marks)

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i. _____

ii. _____

c) State **one advantage of QR codes over traditional barcodes**. (1 mark)

_____

_____

4. A student wants to save data for future use.

a) Differentiate between **primary and secondary storage**. (4 marks)

_____

_____

_____

_____

b) Give **two examples of primary storage** and **two examples of secondary storage**. (4 marks)

i. _____

ii. _____

c) Explain **one benefit of using remote storage**. (2 marks)

_____

_____

5. A new smartphone uses a quad-core CPU.

a) Draw and label a **CPU diagram** showing ALU, CU, and Registers. (4 marks)

b) Explain the **role of each CPU element** in processing data. (4 marks)

i. _____

ii. _____

iii. _____

iv. _____

c) State **two types of CPU cores** and one difference between them. (2 marks)

i. _____

ii. _____

6. A computer user wants to perform file management tasks efficiently.

a) Define **operating system (OS)**. (2 marks)

_____

_____

b) Give **two examples of operating systems** used in mobile devices and **two in desktop computers**. (4 marks)

i. _____

ii. _____

c) Explain **two functions of an OS** in managing resources. (4 marks)

i. _____

ii. _____

7. A learner is setting up a new desktop computer.

a) Match the following cables to their ports: (4 marks)

i) HDMI: _____.

ii)

USB: _____.

iii) Ethernet: _____.

iv) VGA:_____.

b) Explain **two safety precautions** to observe when setting up a computer. (4 marks)

i. _____

ii. _____

c) State **one benefit of reusing functional computer e-waste**. (2 marks)

_____

_____

8. A school plans to install a new computer lab with **modern input/output devices** and **network storage**.

a) Explain **three advantages** of using networked storage in the lab. (6 marks)

i. _____

ii. _____

iii. _____

b) The lab uses a touch screen and a projector for presentations.

i) Explain **how data is input and output** in this setup. (2 marks)

_____

_____

ii) Suggest **one method to secure data** on the lab computers. (2 marks)

_____

_____

THE 47 COUNTIES C1 SCHOOLS' JOINT NATIONAL SBA ASSESSEMENT

SENIOR SCHOOL ASSESSMENT

TERM 2: MIDTERM ASSESSMENT 2026

GRADE 10 – COMPUTER STUDIES 006 JUNE

Time: 2 Hours

LEARNER'S DETAILS

Name: _____. **School:** _____.

Assessment Number: _____. **Date:** _____.

School Code: _____. **Signature:** _____.

INSTRUCTIONS TO CANDIDATES

1. Write your name in the spaces provided above.
2. Write the name of your school and your stream in the spaces provided.
3. Write your admission number and the date of the assessment in the spaces provided.
4. This paper consists of two sections: A and B.
5. Answer all questions in section A and section B.
6. Answer the questions in English.
7. All answers MUST be written in the spaces provided in the paper.
8. Do NOT remove any page from this question paper.

FOR OFFICIAL USE ONLY (EXAMINER'S USE)

SECTION	SECTION A	SECTION B	% SCORE	EE1	EE2	ME1	ME2	AE1	AE2	BE1	BE2
SCORE RANGE	30 MARKS	50 MARKS		90-100	75-89	58-74	41-57	31-40	21-30	11-20	1-10
POINTS				8 POINTS	7 POINTS	6 POINTS	5 POINTS	4 POINTS	3 POINTS	2 POINTS	1 POINT
LEARNER'S TOTAL SCORE											

SECTION A (30 MARKS)

Answer ALL questions in this section.

1. During a history of computing lesson, a teacher shows early tools used for calculations.
   Name ONE early computing device used by traders to count beads._____.
2. A student visits a museum and sees a mechanical calculator invented in the 17th century.
   Name the device invented by Blaise Pascal._____.
3. During a lesson on early computing, learners observe a device that used punched cards.
   Name this early computing device used in textile manufacturing. _____.
4. A teacher explains modern computing components.
   Identify the device that performs arithmetic and logical operations in a computer. _____.
5. During a computer lab session, students examine system components.
   State ONE function of the CPU.

_____.

6. A learner is asked to identify storage types.
   State whether RAM is volatile or non-volatile.

   _____
   _____

7. In a computer science lesson, a teacher discusses input devices.
   Name ONE example of an input device used in data entry.

   _____
   _____

8. A student observes output from a printer.
   State ONE example of an output device.

   _____.

9. During a networking lesson, students learn about communication modes.
   State ONE advantage of full duplex communication.

   _____
   _____

10. A teacher explains system software.
    Name ONE example of an operating system.

    _____
    _____

11. During a practical lesson, learners save a file.
    State the correct order of steps when saving a file in a computer.

    i. _____
    ii.

12. A student studies computer storage.
Name the type of memory that stores BIOS instructions.

_____
_____

13. A learner studies computer ports.
Name ONE example of a computer port used for connecting peripherals.

_____
_____

14. During a lesson on data communication, the teacher defines signals.
State the difference between analogue and digital signals.

_____
_____
_____
_____

15. A student is revising transmission media.
Name ONE example of a guided transmission medium.

_____
_____

16. A teacher demonstrates computer architecture.
State ONE component of the CPU.

_____
_____

17. During a lesson on operating systems, learners compare interfaces.
Name ONE type of user interface.

_____
_____

18. A student is asked to match storage devices.
Name ONE secondary storage device.

_____
_____

19. During a lesson on networking, a teacher introduces protocols.
State what TCP/IP stands for.

_____
_____

20. A learner studies computer generations.
Name the technology used in the second generation of computers.

_____
_____

21. During a discussion on computer performance.

22. A student studies operating system functions.
State ONE function of an operating system.

_____
_____

23. During a lab session, a student observes RAM usage.
State ONE difference between RAM and ROM.

_____
_____

24. A learner studies core designs.
State ONE example of a multi-core processor.

_____
_____

25. During networking lessons, students study OSI model.
How many layers does the OSI model have?

_____
_____

26. A student studies communication modes.
State ONE example of simplex communication.

_____
_____

27. During a lesson on data communication.
Define the term "data".

_____
_____

28. A learner studies input devices.
Name ONE pointing device.

_____
_____

29. A teacher demonstrates buses in computer systems.
Name ONE type of bus in computer architecture.

_____
_____

30. During a discussion on career opportunities.
Name ONE career related to computer science.

SECTION B: (50 MARKS)

Answer ALL questions in this section.

31. A Kenyan museum showcases early computing devices used before modern computers.

Abacus Pascaline Napier's Bones Slide Rule

(a) Match each device with its inventor: (3 marks)
(i) Blaise Pascal: _____.
(ii) John Napier: _____.
(iii) Early traders in Asia: _____.
(b) Explain ONE advantage of using the abacus in early calculations. (2 marks)
_____
_____

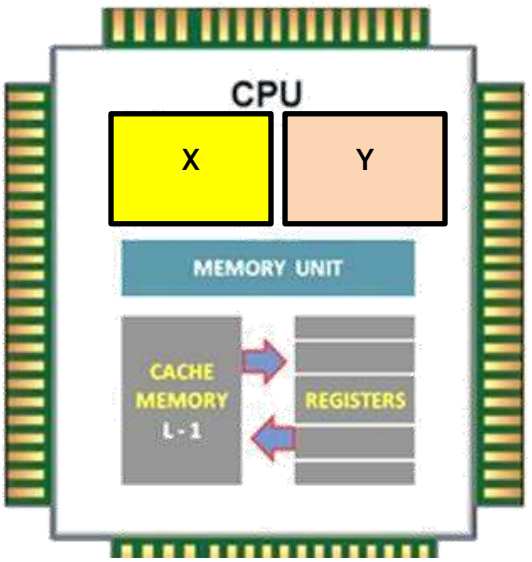
(c) Describe TWO limitations of early computing devices. (2 marks)

i. _____
ii. _____

(d) Explain how modern computers are an improvement over early devices. (3 marks)

_____
_____
_____
_____

32. During a computer lab session, students examine the CPU.



(a) Identify the components labeled X and Y. (2 marks)

X: _____.

Y:_____.

(b) State the function of the ALU. (2 marks)

_____

_____

(c) Describe the fetch-execute cycle. (3 marks)

_____

_____

_____

(d) Explain the role of registers in the CPU. (3 marks)

_____

_____

_____

_____

33. A school ICT department uses different storage devices.

(a) Differentiate between primary and secondary storage. (2 marks)

_____

_____

_____

_____

(b) Classify the following as primary or secondary storage: (4 marks)

i. RAM
ii. Hard Disk
iii. ROM
iv. Flash Drive

Primary storage	Secondary storage

(d) Explain why RAM is called volatile memory. (2 marks)

_____

_____

34. A Kenyan company installs different operating systems in their computers.

(a) State TWO functions of an operating system. (2 marks)

i. _____

ii. _____

(b) Match the following OS with their category: (3 marks)

Windows: 

Linux: 

Android: 

(c) Explain the difference between GUI and CLI. (3 marks)

_____

_____

_____

(d) State TWO factors to consider when choosing an operating system. (2 marks)

i. _____

ii. _____

35. A telecommunications company in Kenya sets up a communication network.



_____

_____

(b) Explain THREE characteristics of data communication. (3 marks)

i. _____
ii. _____
iii. _____

(c) Identify the mode of communication shown in the diagram and explain. (3 marks)

i. _____
ii. _____
iv. _____

(d) State TWO advantages of digital signals over analogue signals. (2 marks)

i. _____
ii. _____

GRADE 10 INTER C1 SENIOR SCHOOLS END OF YEAR EXAMINATIONS

KENYA CERTIFICATE OF BASIC EDUCATION

SENIOR SCHOOL ASSESSMENT

TERM 3: ENDTERM ASSESSMENT 2026

GRADE 10 – COMPUTER STUDIES

Time: 2 Hours

LEARNER'S DETAILS

Name: _____. **School:** _____.

Assessment Number: _____. **Date:** _____.

School Code: _____. **Signature:** _____.

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POINTS				8 POINTS	7 POINTS	6 POINTS	5 POINTS	4 POINTS	3 POINTS	2 POINTS	1 POINT
LEARNER'S TOTAL SCORE											

SECTION A (30 MARKS)

Answer ALL questions in this section.

1. a) Define the term **computer system**. (1 mark)

_____

_____

b) State **two functions of the Central Processing Unit (CPU)**. (2 marks)

c) Name the CPU component responsible for performing arithmetic and logical operations. (1 mark)

_____

d) State one function of the Control Unit. (1 mark)

_____

2. Study the simplified diagram below and answer the questions that follow.



a) Identify component **K**. _____ (1 mark)

b) Identify component **L**. _____ (1 mark)

c) Identify component **M**. _____ (1 mark)

d) Identify component **N**. _____ (1 mark)

e) State one function of component **C**. (1 mark)

_____

_____

3. (a) Distinguish between **data** and **information**. (2 marks)

_____

_____

b) Convert the binary number **101101_2** into decimal. Show your working. (2 marks)

c) State one reason why computers use the binary number system. (1 mark)

_____

_____

4. a) What is **software**? (1 mark)

_____

_____

b) Give **two examples of system software**. (2 marks)

i. _____

ii. _____

c) State two functions performed by an operating system. (2 marks)

i. _____

ii. _____

5. a) Define a **computer network**. (1 mark)

_____

_____

b) State two advantages of connecting computers in a network. (2 marks)

i. _____

ii. _____

c) Distinguish between a **LAN** and a **WAN**. (2 marks)

_____

_____

6. a) What is meant by **computer security**? (1 mark)

_____

_____

b) State two ways of protecting a computer from malware. (2 marks)

i. _____

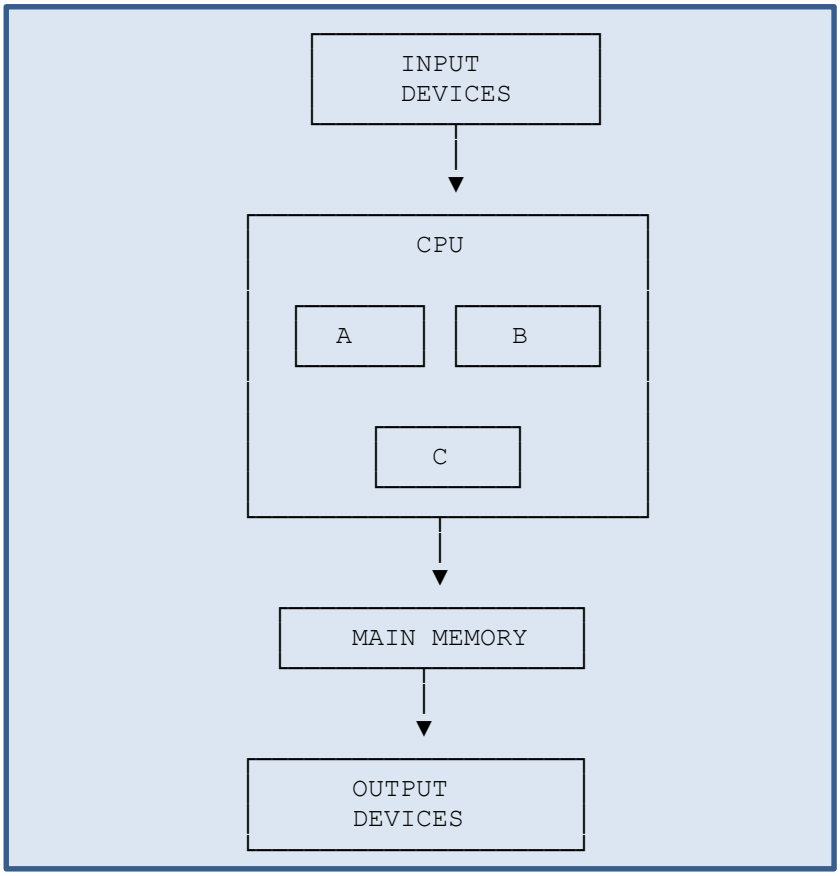
i. _____

ii. _____

SECTION B: 50 MARKS

Answer ALL questions in this section.

7. Study the block diagram below and answer the questions that follow.



a) Identify the CPU components labelled:

i) A_____ (1 mark)

ii) B _____(1 mark)

iii) _____C (1 mark)

b) Explain the function of each of the three CPU components identified in (a). (3 marks)

_____

_____

c) Explain the role of input devices in a computer system. (1 mark)

_____

_____

d) Explain the role of output devices. (1 mark)

8. A school laboratory has computers running an operating system. Students use the computers to create documents, save files and organise their work.

a) Define an **operating system**. (1 mark)

b) State four functions of an operating system. (4 marks)

i. _____

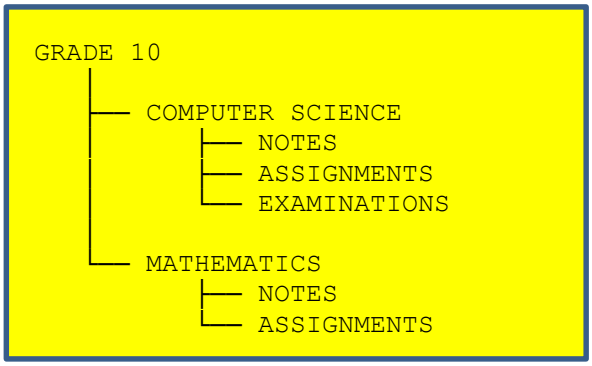
ii. _____

iii. _____

iv. _____

c) Explain the difference between a **file** and a **folder**. (2 marks)

d) A student wants to organise examination documents using the following structure:



Identify:

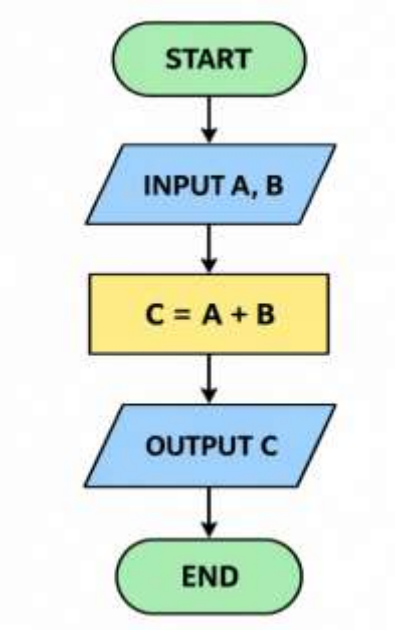
i) The **parent folder** of COMPUTER SCIENCE. (1 mark)

ii) One **subfolder** under COMPUTER SCIENCE. (1 mark)

c) State one advantage of organising files into folders. (1 mark)

9. A learner is required to design a program that accepts two numbers, adds them and displays the result.

Study the flowchart below.



a) Identify the flowchart symbol used for **START/END**. _____(1 mark)

b) Identify the symbol used for **INPUT A,B**._____ (1 mark)

c) Identify the symbol used for **C = A+B**. _____(1 mark)

d) Identify the symbol used for **OUTPUT C**. _____(1 mark)

e) Write an algorithm, in numbered steps, for the process represented by the flowchart. (4 marks)

_____

_____

_____

_____

f) If A = 15 and B = 27, determine the value displayed as C. (2 marks)

_____

_____

10. a) Define the term **programming language**. (1 mark)

_____

_____

_____

c) State three characteristics of a good computer program. (3 marks)

i. _____

ii. _____

iii. _____

d) Study the pseudocode below. BEGIN

```
INPUT age
IF age >= 18 THEN
    OUTPUT "Adult"
ELSE
    OUTPUT "Minor"
ENDIF
 END
```

i) Identify the **input variable** used in the pseudocode. (1 mark)

_____

ii) State the condition being tested. (1 mark)

_____

iii) What output will be produced if the value entered is **20**? (1 mark)

_____

iv) What output will be produced if the value entered is **15**? (1 mark)

_____

11. A secondary school intends to connect computers in its computer laboratory and provide learners with controlled access to the Internet.

a) State three devices that may be used to establish a computer network. (3 marks)

i. _____

ii. _____

iii. _____

b) Explain the purpose of each of the following:

i) **Network switch** (1 mark)

_____

_____

_____

c) State two benefits of Internet access in a school. (2 marks)

i. _____

ii. _____

d) A learner receives an email containing a suspicious attachment from an unknown sender.

State three actions the learner should take to remain safe. (3 marks)

i. _____

ii. _____

iii. _____