

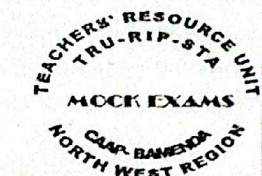
REPUBLIQUE DU CAMEROUN  
Paix-Travail-Patrie

MINISTRE DES ENSEIGNEMENTS SECONDAIRES

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**GCE OL**

REPUBLIC OF CAMEROON  
Peace-Work-Fatherland

MINISTRY OF SECONDARY EDUCATION

TEACHERS' RESOURCE UNIT  
REGIONAL BRANCH FOR THE NORTH WEST

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MARCH 2026

The Teachers' Resource Unit and the Regional Inspectorate of Pedagogy, in collaboration with COSTA	SUBJECT CODE NUMBER 0595	PAPER NUMBER 2
GENERAL CERTIFICATE OF EDUCATION REGIONAL MOCK EXAMINATION	SUBJECT TITLE COMPUTER SCIENCE	
ORDINARY LEVEL		

Time Allowed: **TWO and a half hours**  
**INSTRUCTIONS TO CANDIDATES**

Mobile phones are **NOT ALLOWED** in the examination room.

- ❖ Answer any five questions.
- ❖ All questions carry 20 marks each. For your guidance the appropriate mark for each part of a question is indicated in brackets.
- ❖ You are reminded of the necessity for good English and an orderly presentation in your answers.
- ❖ In calculations, you are advised to show all the steps in your working, giving your answer at each stage.
- ❖ Calculators are allowed.

- a) i) Define the term Operating System and state any two (02) of its functions. (4 Marks)  
 ii) Computer hardware can be grouped based on their technology, and their method of accessing data. Classify the following storage media by stating their method of accessing data. Copy and complete the table below (4 Marks)

Memory	Technology Use	Method of accessing data
Magnetic tape		
Flash drive		
Solid state drive		
CD-RW		

- b) i) State two examples of an application software that needs to be installed in a computer to;  
 - Enable a learner work with data that requires calculation (4 Marks)  
 - Design graduation certificates. (2 Marks)  
 ii) With the aid of a well annotated diagram, explain the machine cycle. (2 Marks)
- c) With the coming of technology, most computer users are resolving to use cloud-computing technologies. (2 Marks)  
 i) What is cloud computing? (4 Marks)  
 ii) State and explain any two (02) services offered by cloud computing.

2. A teacher intends to write a program to calculate the average between two test marks for a given term. The algorithm will be transformed into a programming language to get the source code and the object code respectively. (2 Marks)

- a) i) Differentiate between source code and object code (2 Marks)  
 ii) What is a program?

b) The pseudocode to implement the solution is given below

1. Start
2. Var T1, T2, Avg
3. Enter the test one-mark T1
4. Enter the test two-mark T2
5. Calculate the average  $Avg = (T1 + T2) / 2$
6. If Avg is greater than or equal to 10?
7.     Display "Passed"
8. Else
9.     Display "Failed"
10. Output "Goodbye"
11. Stop

- i) How many variables are in the above algorithm? Name them. (3 Marks)  
 ii) What is a variable? (2 Marks)  
 iii) What is a datatype? (2 Marks)  
 iv) Which datatype is suitable for the variables mentioned in (i) above? (3 Marks)  
 v) Represent the above algorithm using a flow chart. (6 Marks)

3. a) i) Sketch the following logic gates, clearly labelling inputs and outputs XOR, NAND and NOR. (3 Marks)  
 ii) What is a logic gate? (2 Marks)  
 iii) What is a pixel? (2 Marks)

b) A black and white image on a screen will require only a single bit to encode each pixel.

Figure 1 shows a black and white bitmapped image on the screen of a computer.

Figure 2 shows the memory locations where the image is stored.

The first byte used for the pixel data is at memory location 187.

The pixel stores a byte of data row-by-row, starting with row 1:

- Black pixels are encoded with the bit set to 1, while White pixels are encoded with the bit set to 0.

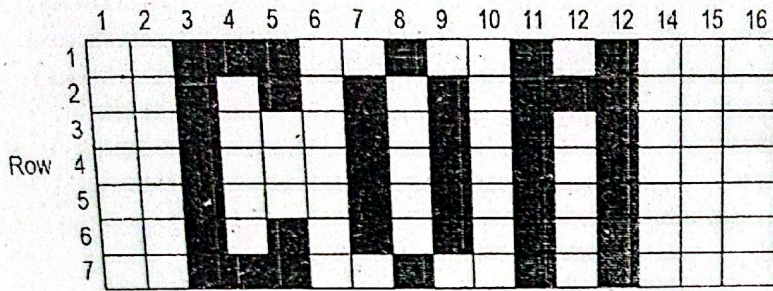


Figure 1

Location

187  
188  
189  
190  
:  
:  
:  
200

Contents	
0011	1001
0010	1000
0010	1000

Figure 2

- i) What will be the contents of memory location 189 and 190 in binary? (4 Marks)
- ii) What will be the contents of memory location 190 in Hexadecimal? (1 Mark)
- c) Use binary arithmetic to evaluate
  - i.  $11001 + 1011$  (2 Marks)
  - ii.  $101011 - 1101$  (2 Marks)
- d) Carry out the following conversions
  - i.  $1011111_2$  to Octal (2 Marks)
  - ii.  $1011111_2$  to Hexadecimal (2 Marks)

4. A Community Health Centre has recently acquired a grant of computers to better manage electronic health records (EHR) and improve patient data security.

- a) Identify three (03) essential hardware components to be considered when selecting the computer to be used in this community health centre. (3 Marks)
- b) State how these three (03) components mentioned above can boost the performance of the computer. (3 Marks)
- c) State and explain two (2) health hazards that may arise if the computer environment in the community clinic is poorly setup. (4 Marks)
- d) Give the full meaning of the following acronyms CMOS, BIOS, ASCII (3 Marks)
- e) Differentiate between the following
  - i) Impact and non-impact printers (2 Marks)
  - ii) Simplex and Duplex in data transmission (2 Marks)
- f) With the aid of examples what is social media? (3 Marks)

5. A certain school has been relying on manual paper-based processes to manage student data, attendance and grades. This has led to frequent errors, slow communication and an inability for parents to get timely updates on their children's progress. The school administration has decided to implement a new School Management Information System (SMIS) to improve efficiency and communication.

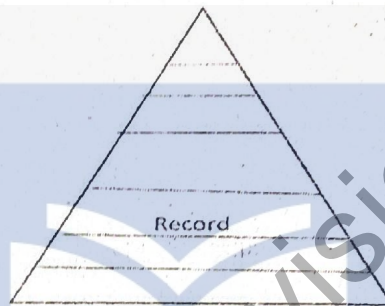
- a) State and briefly explain any four (04) components that make up an information system. (4 Marks)
- b) What are the stages involved in the development of this School Management Information System (SMIS). (4 Marks)
- c) The developer intends to install the system using either pilot or parallel implementation.
  - i. Distinguish between pilot and parallel implementation (2 Marks)
  - ii. What is a computer crime? (2 Marks)
  - iii. State any two (02) computer users' activities considered as a crime. (2 Marks)
- d) Briefly differentiate between the following.
  - i. Data validation and data verification (2 Marks)
  - ii. System documentation and User documentation (2 Marks)
  - iii. Green computing and ergonomics (2 Marks)

6. As an IT consultant, you are hired to design and implement a new computer network for a rapidly expanding college campus. The campus has two main buildings (A and B) that need to be connected, and each building has three distinct departments: Administration, Labs, and Library. The network must efficiently support different types of data transmission, maintain security, and ensure reliable connectivity.

- a) Name and explain any two (02) network topology that can be used to implement this computer network. **(4 Marks)**
- b) Identify and explain the primary functions of two (02) different networking devices that would be essential for the implementation of this network. **(4 Marks)**
- c) Identify two (02) transmission media that can be used to connect the computers within a building and across the two buildings. **(2 Marks)**
- d) The Administration frequently holds video conferences with external partners. **(2 Marks)**
- What is video conferencing? **(2 Marks)**
  - List two devices needed to successfully hold this video conference. **(2 Marks)**
  - Which transmission mode is used during these video conferences? Justify. **(2 Marks)**
- e) The college is concerned about unauthorized access to the sensitive student and financial data. State four (04) security measures that can be used to secure the data. **(4 Marks)**

7. A common way to organize data is in the form of a hierarchy that comprise; database, fields, characters bytes, files, bits and records.

- a) Using the hierarchy of data stated above, copy and complete the pyramid below. **(2 Marks)**



- b) Define the following? **(4 Marks)**
- Primary Key
  - Database

c) Table below is an extract from a table in a relational database management system (RDBMS) that a school uses to keep track of its students

Matricule	Name	Gender	Regdate
F301	Che	M	12/9/2025
F502	Ngum	F	12/9/2025
F701	Ariel	M	13/9/2025
F204	Ngum	M	12/9/2025
F601	Paul	M	13/9/2025

- How many records and fields are there? **(2 Marks)**
  - What is the data type of Matricule, Name, Gender and Regdate? **(4 Marks)**
  - Which field is best suited for primary key? **(1 Mark)**
- d) A project has been defined to contain the following list of activities along with their required times for completion.

Activity No.	Activity	Time (weeks)	Immediate Predecessors
A	Collect requirements	3	
B	Analyze processes	2	A
C	Design processes	6	B
D	Design screens	2	C
E	Program	5	C, D
F	Test and Document	7	E
G	Install	2	E, F

- Draw the Gantt chart for this project. **(5 Marks)**
- Determine the critical path and the duration for this project. **(2 Marks)**

END