

## Information and Communication Technologies 2

0796

**CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD**  
General Certificate of Education Examination / Technical and Vocational Education Examination

**JUNE 2020**

**ADVANCED LEVEL**

Subject Title	Information and Communication Technologies
Paper No.	2
Subject Code No.	0796

**GCE REVISION**  
**Two and a half hours**

*Answer any SIX questions.*

*All questions carry 17marks each. For your guidance, the approximate mark for each part of a question is indicated in brackets.*

*You will be marked on your ability to use good English, to organize information clearly and to use specialist vocabulary where appropriate.*

*In calculations, you are advised to show all the steps in your working, giving your answer at each stage*

<http://www.gcerevision.com>

**Turn Over**

1. (i) Explain the following computer terms giving an example for each. (2 marks)
- (a) Automation. (2 marks)
  - (b) Control system. (2 marks)
  - (c) Robot. (2 marks)
- (ii) Discuss TWO factors that determine the reliability of an Information system. (2 marks)
- (iii) Identify TWO natural hazards that can affect a computer system and give a measure that can be used to secure the data in each case. (4 marks)
- (iv) (a) Distinguish between Simulation and Prototyping? (2 marks)
- (b) List the steps used in prototyping. (2 marks)
  - (c) Give the role of end users' feedback in prototyping. (1 mark)

2. (i) One method of data transmission is asynchronous. (2 marks)
- (a) Describe asynchronous data transmission giving its disadvantages and advantages. (2 marks)
  - (b) Describe another method of data transmission: (1 mark)
- (ii) (a) List and explain THREE components of an Information System. (3 marks)
- (b) Describe the following Information Systems, stating an appropriate use of each
    - GIS (4 marks)
    - DSS (1 mark)
- (iii) (a) What is a programming paradigm? (2 marks)
- (b) Briefly define the following programming paradigms. (2 marks)
    - Imperative (2 marks)
    - Declarative (2 marks)
  - (c) Discuss briefly what is meant by high level programming language? (2 marks)

3. (i) (a) Define System Development Life Cycle (SDLC). (1 mark)
- (b) Name the SIX stages of SDLC and give TWO major tasks of the first three stages. (6 marks)
- (ii) The web form below is used to collect user input data:
- ```
<form action="user.php" method="post" >
<p>
Name:
<input type="text" name="name"/>
</p>
</form>
```
- (a) Name the scripting language used to process the form above. (1 mark)
- (b) What is the use of the attributes:
    - action (1 mark)
    - method (1 mark)
  - (c) Name another method value that can be used in place of "post". (1 mark)
- (iii) (a) Discuss with examples THREE impacts of the use of ICT in health care in Cameroon. (3 marks)
- (b) Give THREE reasons why the Health Information System is not very effective in Cameroon? (3 marks)

4. (i) (a) What is system software? (1 mark)
- (b) Describe the role of any TWO system software. (2 marks)
  - (c) Explain the *Round Robin* and the *First Come, First Serve* process management strategies used by the operating system in job scheduling. (3 marks)

- (ii) (a) Use a label diagram to describe machine instruction cycle of the computer. (2 marks)
- (b) Explain the functions of THREE components of the CPU. (3 marks)
- (c) Give the main function of the Random Access Memory (RAM) in the computer system. (1 mark)
- (iii) Differentiate between *Interrupt* and *Polling*. (2 marks)
- (iv) (a) What is a file extension? (1 mark)
- (b) Copy and complete the table below in your answer booklet:

FILE TYPE	FILE EXTENSION
Bitmapped graphics	.JPEG
	.PDF
Video	

(2 marks)

5.

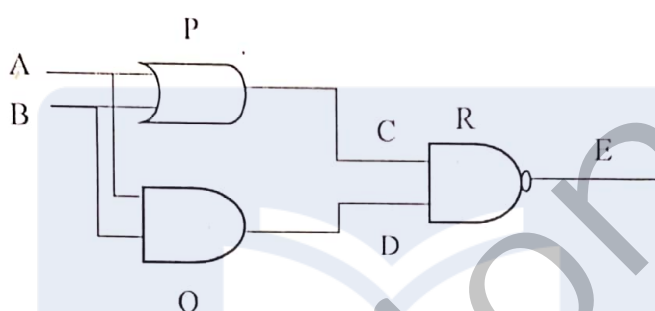


Fig. 5

- (i) From the digital circuit above (Fig. 5), identify the logic gates labeled, P and R. (2 marks)
- (ii) Write out the Boolean expression of the outputs C, D and E in terms of inputs A and B. (3 marks)
- (iii) Construct a truth table for this digital circuit. (4 marks)
- (iv) (a) What is a project? (2 marks)
- (b) Name and explain TWO methods used in controlling projects. (4 marks)
- (c) Explain TWO responsibilities of a project manager. (2 marks)

- 6. (i) CAL is a pedagogic approach gradually being used in Cameroon today.
  - (a) Define Computer Assisted Learning (CAL) (1 mark)
  - (b) Briefly discuss TWO course delivery methods used in CAL. (2 marks)
  - (c) Explain ONE advantage and ONE disadvantage of CAL in Cameroon. (2 marks)
- (ii) Define the following Database terms:
  - (a) Relationship. (1 mark)
  - (b) Attribute. (1 mark)
  - (c) Entity. (1 mark)
  - (d) Redundancy. (1 mark)
- (iii) (a) What is Normalization in relation to database modeling? (2 marks)
- (b) When is a table in a database said to be in First Normal Form? (2 marks)
- (iv) In time-sharing multi-programming environment, many users share the same system simultaneously. This situation can result to various security problems.
  - (a) Identify TWO of such security problems. (2 marks)
  - (b) Differentiate between multitasking and multiprogramming. (2 marks)

Turn Over

7. (i) Explain briefly the use of the following input technologies and cite a situation in which each can be useful:
- (a) Bar code reader. (2 marks)
  - (b) Optical Character recognition. (2 marks)
  - (c) Automatic speech recognition. (2 marks)
- (ii) (a) Differentiate between data integrity and data verification. (2 marks)
- (b) Name and describe TWO data verification techniques. (2 marks)
- (iii) (a) Explain TWO functions of a system analyst. (2 marks)
- (b) Explain TWO ways a System Analyst can collect information about a system for analysis. (1 mark)
- (iv) (a) Convert the octal number 256 to binary (base 2). (2 marks)
- (b) Convert the binary number 11011.11 to decimal (base 10). (2 marks)

8. (i) Explain the following online Electronic Services below giving ONE advantage and ONE disadvantage for each:
- (a) E-Government. (3 marks)
  - (b) E-Banking. (3 marks)
  - (c) E-Commerce. (3 marks)
- (ii) (a) What is a social network? Give one example. (2 marks)
- (b) Outline ONE advantage and TWO disadvantages of social networking to students in Cameroon. (3 marks)
- (iii) (a) What is meant by the term IP address as it relates to the Internet? (1 mark)
- (b) Briefly explain how protocols send messages across the Internet. (2 marks)