

## 0796 Information and Communication Technologies 2

### GENERAL CERTIFICATE OF EDUCATION BOARD

#### General Certificate of Education Examination

JUNE 2022

ADVANCED LEVEL

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

---

Two and a Half Hours

*Answer any SIX questions.*

*All questions carry 17 marks 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.*

---

*Turn Over*

1. (i) Briefly explain the following terms:

(a) MODEM

(2 marks)

(b) Firewall

(2 marks)

(c) Router

(2 marks)

(ii) (a) Storage devices are either optical or magnetic. List two examples of each of optical and magnetic.

(2 marks)

(b) Describe one use of OCR to a secretary.

(2 marks)

(c) Give ONE limitation of OCR.

(1 mark)

(iii) Explain ONE application of computers in each of the following domains.

(a) Tourism

(2 marks)

(b) Banking

(2 marks)

(c) Marketing

(2 marks)

2. (i) (a) Name TWO types of communication systems that can be used by business organisations to enhance discussions between members of the organisation.

(2 marks)

(b) For any of the systems in (a), discuss how it functions, stating clearly the hardware and software required.

(2 marks)

(ii) Define the following and in each case illustrate ONE situation where they can be useful:

(a) Computer simulation.

(3 marks)

(b) Control system.

(3 marks)

(c) Robots.

(3 marks)

(iii) (a) Apart from feasibility studies, outline two other activities involved in the investigation phase of the SDLC.

(2 marks)

(b) Describe the different types of feasibility studies carried out in the investigation phase of the SDLC.

(2 marks)

3. (i) Explain the following concepts as used in Algorithms.

(a) Algorithm

(1 mark)

(b) Efficiency of an algorithm

(2 marks)

(c) Sequence control structure

(2 marks)

(ii) Describe each of the following transmission methods and give an example of each

(a) Parallel transmission

(2 marks)

(b) Serial transmission

(2 marks)

(iii) The administration of a school is made up of 10 employees; each of them uses a personal computer (PC) connected to a local area network (LAN). The network was later upgraded to intranet.

(a) Define intranet.

(1 mark)

(b) Give the difference between the intranet and extranet.

(2 marks)

(c) State 3 advantages of intranets to the school.

(3 marks)

(d) Explain two security measures to be used to protect the intranet.

(2 marks)

4. (i) Describe the following with respect to Database Management Systems:

- (a) Attributes (2 marks)
- (b) Data redundancy. (2 marks)
- (c) Partial dependence (1 mark)
- (d) Primary key. (1 mark)

- (ii) (a) What is prototyping? (2 marks)
- (b) Give TWO advantages of prototyping. (2 marks)
- (c) At which stage in system development is prototyping done. (1 mark)

(iii) Differentiate between the following and give an example of each.

- (a) Low level programming and high level programming. (4 marks)
- (b) System software and application software. (2 marks)

- 5. (i) (a) With the aid of a diagram, showing all the components, describe the machine cycle. (2 marks)
- (b) Explain the influence of RAM on machine performance. (2 marks)
- (c) State one other component that can enhance machine performance. (1 mark)

(ii) Give the functions of the following memory units, stating whether they are volatile or non-volatile:

- (a) EPROM. (2 marks)
- (b) Cache memory. (2 marks)
- (c) Registers. (2 marks)

- (iii) (a) What is computer ethics? (1 mark)
- (b) State one way to foster computer ethics in an institution. (1 mark)
- (c) Discuss TWO ethical obligations of users of an information system. (2 marks)
- (d) Describe TWO computer crimes that are common in Cameroon. (2 marks)

- 6. (i) (a) What is an operating system ? (2 marks)
- (b) State and describe TWO functions of an Operating system. (2 marks)
- (c) Why are some operating system said to be mono-tasking? Give an example. (2 marks)

(ii) Explain the following terms in project management:

- (a) Task (1 mark)
- (b) Slack task (1 mark)
- (c) Critical path (2 marks)
- (d) PERT chart. (2 marks)

(iii) Explain the functions of the following stating an appropriate example

- (a) ISP (2 marks)
- (b) Protocol (1 mark)
- (c) Handshaking. (2 marks)

Turn Over



7. (i) (a) What is e-commerce? (1 mark)  
 (b) Outline any TWO e-banking services provided to customers by the banks in Cameroon. (2 marks)  
 (c) Explain the effect of digital divide in e-banking services in Cameroon (2 marks)
- (ii) Describe the following job scheduling techniques used by the operating system, stating whether they are pre-emptive or non pre-emptive:  
 (a) First Come First Serve (2 marks)  
 (b) Round Robin (2 marks)  
 (c) Shortest Job first. (2 marks)
- (iii) (a) Convert the binary number 1001111001 to octal (base 8) (1 mark)  
 (b) Convert the octal number 564 to hexadecimal (base 16). (2 marks)  
 (c) Evaluate the binary expression:  $1110100 + 110111$ . (1 mark)  
 (d) State De Morgan's theorems (2 marks)
- 
8. (i) Describe each of the following security measures and state a situation in which they can be used.  
 (a) Encryption (2 marks)  
 (b) Firewall (2 marks)  
 (c) Backup. (2 marks)
- (ii) Explain each of the following approaches used during conversion to a new system.  
 (a) Phased approach (2 marks)  
 (b) Direct approach (2 marks)  
 (c) Parallel approach (2 marks)
- (iii) (a) Define an Expert System. (2 marks)  
 (b) Describe the use of Expert System in a named domain. (1 mark)  
 (c) State and describe ONE other system that can be helpful to decision makers of an organisation. (2 marks)

---

GO BACK AND CHECK YOUR WORK