0796 Information and Communication Technologies 2

GENERAL CERTIFICATE OF EDUCATION BOARD

General Certificate of Education Examination

JUNE 2025 **ADVANCED LEVEL**

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

Duration: 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 graded on your ability to use good English, organise information clearly and the use of specialist vocabulary where appropriate.

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

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Turn Over

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Question 1

(i)		The operating system performs several activities in a computer such as job scheduling in a pre-emptive and non-pre-emptive manner.	
	(a)	What is job scheduling?	**(1 mark)**
	(b)	Describe TWO scheduling strategies and say whether they are pre-emptive or non-pre-emptive.	**(3 marks)**
	(c)	State three other functions of the operating system.	**(3 marks)**
(ii)		Telemedicine and expert system are two applications that are common in the health domain.	
	(a)	What is telemedicine?	**(1 mark)**
	(b)	State two advantages of telemedicine.	**(2 marks)**
	(c)	Describe ONE application of expert system in health.	**(2 marks)**
	(d)	Describe ONE other application of the computer in health.	**(2 marks)**
(iii)		Briefly describe the following information systems	
	(a)	Automation.	**(1 mark)**
	(b)	GPS.	**(1 mark)**
	(c)	Transaction Processing System.	**(1 mark)**

Question 2

(i)		Data is collected and stored free of errors with the use of data validation and verification techniques	
	(a)	Describe data validation and data verification.	**(2 marks)**
	(b)	Describe ONE method of data validation and ONE method of data verification.	**(2 marks)**
(ii)		A file in storage is represented using TWO components as follows: diameter.PDF.	
	(a)	Define the two components in the representation.	**(1mark)**
	(b)	Give the full meaning of PDF and state two advantages of files that terminate with PDF.	**(3 marks)**
	(c)	State the name given to the software that assigns PDF to the representation.	**(3 marks)**
	(d)	State an application that can be used to open the stated file above.	**(1 mark)**
	(e)	State the complete representation of a file named communication that I created in Notepad.	**(1 mark)**
(iii)		Describe the following concepts in task management in the computer.	
	(a)	Multitasking.	**(2 marks)**
	(b)	Multiprocessing.	**(2 marks)**

Question 3

(i) A project schedule is given below

Task	**Predecessor**	**Duration**
A	-	3
B	-	2
C	A	4
D	B	1
E	D	2

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Task	Predecessor	Duration
F	B	3
G	C	2

	(a)	What is a task?	**(1 mark)**
	(b)	Represent the schedule above in a Gantt chart.	**(3 marks)**
	(c)	Determine the critical path.	**(2 marks)**
	(d)	Determine any slack task if it exists.	**(1 mark)**
(ii)		Two examples of interfaces are GUI, and command line (CL) interfaces.	
	(a)	What is an operating system interface?	**(1 mark)**
	(b)	State two characteristics of GUI.	**(1 mark)**
	(c)	Give two reasons why the GUI is commonly used than the CL interface.	**(2 marks)**
	(d)	Give one advantage of command line over GUI.	**(1 mark)**
(iii)		A printer is one of the main output devices.	
	(a)	State TWO characteristics that determine the quality of a printer.	**(1 mark)**
	(b)	State two categories of printers and in each category give an example.	**(3 marks)**
	(c)	How can we measure the speed of a printer?	**(2 marks)**

Question 4

(i)		(a) What is a malware?	**(1 mark)**
	(b)	State and describe three types of malware.	**(3 marks)**
	(c)	Describe three measures that can be taken to protect a school from malware attacks.	**(3 marks)**
(ii)		(a) Define the term information system.	**(1 mark)**
	(b)	State four components of a basic information system.	**(2 marks)**
	(c)	State two factors that determine the reliability of an information system.	**(2 marks)**
	(d)	Describe briefly an expert system.	**(2 marks)**
(iii)		(a) State the THREE divisions of a CPU.	**(1 mark)**
	(b)	Make a labelled diagram of the machine cycle.	**(2 marks)**

Question 5

(i)		(a) What is E-commerce?	**(1 mark)**
	(b)	State two limitations of e-commerce.	**(2 marks)**
	(c)	Give two security measures to ensure during e-commerce.	**(2 marks)**
(ii)		A computer is divided into two main components: hardware and software.	
	(a)	Describe two types of software that manage hardware in a computer.	**(3 marks)**
	(b)	Describe tailor-made software stating an example of it.	**(2 marks)**
	(c)	State one reason to buy and use licences software.	**(2 marks)**
(iii)		The algorithm given by a student to assess body temperature is given as: **0 - Start** 1 - Get body temperature 2 - Check if the temperature is equal to 37 3- Print ***Normal*** if YES	

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4- Print ***Abnormal*** if NO
5- Stop

	(a)	State the form of the algorithm above.	**(1 mark)**
	(b)	Convert the above algorithm to a flowchart.	**(3 marks)**
	(c)	State the control structure used in the algorithm.	**(1 mark)**

Question 6

(i)		Cyber security has become very important to countries, organization and individuals with regards to the running of their daily activities. This however has several challenges.	
	(a)	Explain the concept of cyber security .	**(2 marks)**
	(b)	Explain two reasons why cyber security is important to an organization.	**(2 marks)**
	(c)	Briefly explain two cyber-crimes commonly practiced in Cameroon.	**(2 marks)**
(ii)		(a) What is an operating system?	**(1 mark)**
	(b)	Briefly explain four functions of the operating system.	**(4 marks)**
	(c)	Describe two types of operating system based on the number of users.	**(2 marks)**
(iii)		Define the following terms as used in database.	
	(a)	Entity.	**(1 mark)**
	(b)	Primary key.	**(1 mark)**
	(c)	Integrity.	**(1 mark)**
	(d)	Redundancy.	**(1 mark)**

Question 7

(i)		Computer networks are sometimes classified based on the topology.	
	(a)	What is a network topology?	**(1 mark)**
	(b)	Use a diagram to describe a star topology of eight nodes with client-server architecture	**(4 marks)**
	(c)	State two disadvantages of a ring topology compared to a star network.	**(2 marks)**
(ii)		Differentiate the following by describing each component.	
	(a)	Internet and www.	**(2 marks)**
	(b)	Intranet and extranet.	**(2 marks)**
	(c)	Browser and search engine.	**(2 marks)**
(iii)		(a) State one use of low level programming.	**(1 mark)**
	(b)	Describe a compiler and give one example you have used.	**(2 marks)**
	(c)	What does it mean by an unsuccessful compilation of a code?	**(1 mark)**

Question 8

(i)		Briefly explain the following as used in database.	
	(a)	Flat file.	**(1 mark)**
	(b)	DBMS.	**(2 marks)**
	(c)	Transitive dependency.	**(2 marks)**
(ii)		(a) Convert 1111011_2 to octal and to hexadecimal.	**(3 marks)**
	(b)	Explain why the binary number system is used in computing than	**(2 marks)**

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		decimal.	
	(c)	State the hierarchy of units of time from picoseconds to milliseconds. Hence convert 2×10^{-6} ms to nanoseconds.	**(3 marks)**
(iii)		In the design of a system, a simple model of the system is design and used to test the Functionality of the new system before creating it.	
	(a)	What is the term given to the simple design model?	**(1 mark)**
	(b)	State two advantages of designing the simple model before going for the real system.	**(2 marks)**
	(c)	Give a limitation of this technique.	**(1 mark)**

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