

REPUBLIQUE DE CAMEROUN
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REPUBLIC OF CAMEROON
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MINISTRY OF SECONDARY EDUCATION

TEACHERS' RESOURCE UNIT
REGIONAL BRANCH FOR THE NORTH WEST

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MARCH 2024

The Teachers' Resource Unit and the Regional Inspectorate of Pedagogy, in collaboration with COSTA	SUBJECT CODE NUMBER 0796	PAPER NUMBER 2
GENERAL CERTIFICATE OF EDUCATION AND INTERMEDIATE TECHNICAL AND VOCATIONAL EDUCATION REGIONAL MOCK EXAMINATION	SUBJECT TITLE ICT	
ADVANCED LEVEL		

Time Allowed: TWO HOURS
INSTRUCTIONS TO CANDIDATES

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

ANSWER SIX QUESTIONS

All questions carry equal marks.

You are reminded of the necessity for good English and orderly presentation in your answers.

TURN OVER

1. Briefly explain each of the following terms and state one example each of its application. (2 marks)
- (a) Prototyping (2 marks)
 - (b) Social media (2 marks)
 - (c) Artificial Intelligence (2 marks)
- ii) (a) What is the difference between HTTP and HTTPS? (2 marks)
- (b) What are the components of a TPS? (1 mark)
- (iii) (a) What is "Data Mining" (2 marks)
- (b) Describe how encryption can protect information or a message sent across a network. (2 marks)
- (c) Define the following terms as used in operating system
- Spooling (2 marks)
 - Deadlock (2 marks)
- (d) Differentiate between interrupts and deadlock (2 marks)
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2. (i) a) Differentiate between Data verification and Data validation with the aid of an example. (3 marks)
- b) What do you understand by Versatility of a hardware? (2 marks)
- (ii) Briefly explain how the following properties of a computer can render it more compatible for use than another, stating the hardware that enhances each of these functionalities. (2 marks)
- (a) Speed (2 marks)
 - (b) Storage (2 marks)
 - (c) Resilience (2 marks)
- (iii) What is the main difference between the following computing languages? (2 marks)
- (a) PHP and SQL (2 marks)
 - (b) HTML and CSS (2 marks)
 - (c) High Level Language (HLL) and Low Level Language (LLL) (2 marks)
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3. (i) (a) What is Referential Integrity? (1 marks)
- (b) Give two advantages of a Database program over a Spreadsheet program. (2 marks)
- (c) Explain the term "redundancy" as used in database and describe how it can be handled in database design. (2 marks)
- (ii) Explain the following system terminologies. (2 marks)
- (a) Parallel implementation (2 marks)
 - (b) Pilot implementation (2 marks)
 - (c) System Development Life Cycle (1 mark)
 - (d) State two models used in SDLC (1 mark)
- (iii) Cyberspace has become the most used space with ICT tools; as such the society is experiencing many crimes related to cyberspace. Briefly describe the following cybercrimes. (1 mark)
- (a) DoS (1 mark)
 - (b) Cyber Terrorism (1 mark)
 - (c) Phishing (1 mark)
- (iv) State one measure that can be used to combat each crime in (ii) above. (1 mark)
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4. (i) Evaluate the following, where binary numbers are absolute values: (3 marks)
- (a) 34_{10} to binary (1 mark)
 - (b) $10110101_2 - 11111_2$ (1 mark)
 - (c) $101101_2 \times 101_2$ (2 marks)
- (ii) Give one reason why: (1 mark)
- (a) The operating system is often installed before any other software. (1 mark)
 - (b) People prefer working with graphical user interface than command line interface. (1 mark)
 - (c) Using a Laptop other than a Desktop computer with similar specification for office tasks. (1 mark)
- (iii) a) Differentiate between the following (1 mark)
- Integer and real number data type
 - Array and string data structure
- b) Write the following abbreviations in full and state an application for each (2 marks)
- LIFO
 - FIFO
- iv) a) Give the full meaning of each of the following file formats and state the purposes for which they are used. (4 marks)
- .PDF (1 mark)
 - .MPEG (1 mark)
- b) Give the difference between Word Art and Clip Art. (1 mark)

5. (i) Explain the following algorithm development concepts: (2 marks)
- (a) Stepwise refinement (2 marks)
- (b) Top-down design (2 marks)
- (c) State the difference between source code and pseudo code (2 marks)
- (ii) (a) Briefly explain the use of the following programming tools: (1 mark)
- Compiler (1 mark)
 - Interpreter
- (b) State the Software that you would recommend for the following activities in an Enterprise (4 marks)
- Stock taking
 - Personnel Management
 - Publicity of company products and advertisement
 - Seminars and meetings.
- (iii) a) State two main advantages of using graphical user interface (1 mark)
- b) An algorithm can be divided into any of the following control structures based on the functions to be performed: Sequence, Selection/choice and Iteration. (3 marks)
- c) Briefly explain each of the three control structures cited above.
- d) Study the algorithms A, B and C below

A: IF you are above 1.95 meters tall
 THEN apply for the basketball classes' scholarship
 ELSE pay for your basketball classes.

B: GO TO the box
 Pick two numbers randomly
 Add the two numbers
 WRITE down the sum
 STOP

C: DO spend the money in your pocket, one hundred francs at a time
 UNTIL you are left with less than one hundred francs.

Match each algorithm above to its corresponding control structure by copying and completing the following table:

Algorithm	Type of control structure
A	
B	
C	

- b) What is the importance of a flow chart in program design (1 mark)
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6. (i) (a) Briefly describe how the operating system performs the following functions (2 marks)
- Memory management (2 marks)
 - File management (2 marks)
- b) State and describe the functions of any two memory chips found in a computer. (2 marks)
- c) Explain the difference between pre-emptive and non-pre-emptive scheduling (2 marks)
- (ii) (a) Name two types of communication systems that can be used by business organizations to enhance discussions between members of the organization. (2 marks)
- (b) For any of the systems in (a), discuss how it functions. (2 marks)
- (c) Define online banking and give one advantage of online banking. (2 marks)
- (iii) The web form below is used to collect user input data: (1 mark)
- ```
<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: (2 marks)
- Action
  - Method

(c) Given that a disk has 18 sectors, 80 tracks per surface, and a sector capacity of 512 bytes. Prove that the storage capacity of the disk is 1.44MB. (2 marks)

7. (i) Explain each of the following project management terminologies: (1 mark)
- (a) Critical path (1 mark)
  - (b) Milestone (2 marks)
  - (c) With the aid of examples. Explain two automatic data capture methods (2 marks)
  - (d) A secretary works 8 hours daily on a computer. State four health related illnesses she may experience as a result of poor ergonomic conditions (2 marks)

(ii) The circuit below implement the AND logical operator for the bulb to turn on i.e. when the logical value of F equals 1 or when power passes from power supply to the bulb.

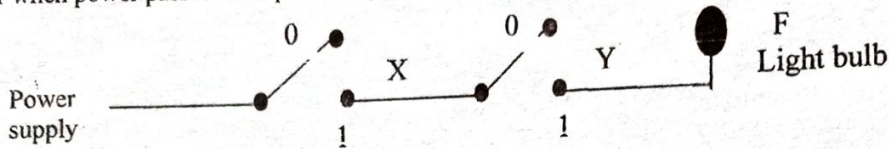


Figure 1

(a) Use figure 1 to complete the table below for the inputs variables X and Y taking a value of 1 for ON and 0 for OFF. (3 marks)

X	Y	F
0	0	
0	1	
1	0	
1	1	

- (b) What value will X and Y take for the bulb to light? (2 marks)
- (c) Given two inputs X and Y in a binary logic circuit write down two expressions of De Morgan's theorem for AND and OR. (2 marks)
- (iii) (a) Give two main features of an expert system and state why it is called a knowledge based system? (2 marks)
- c) Explain the following (2 marks)
  - File format
  - File compression

8. (i) State the role of the following types of software in a computer system with one example each (2 marks)
- (a) Operating System (2 marks)
  - (b) Device driver (2 marks)

(iii) A software development schedule is shown in the table below.

TASK	DESCRIPTION	ORDER	DURATION
A	Produce software specification	To be completed first	1
B	Write test plans	Start when A is complete	3
C	Software design	Start when A is complete	2
D	Software Code	Start when B is complete	3
E	Developers Test	Start when C is complete	3
F	Software Test	Start when D & E are complete	4

- (a) Construct a PERT chart for the project. (3 marks)
- (b) Identify the critical path and hence the minimum time to completion. (2 marks)
- (c) Which device is used to amplify network signals to cover a long distance? (1 mark)
- ) a) Differentiate between the following (3 marks)
  - Synchronous and Asynchronous transmission
  - Simplex and Duplex
  - Simulation and Modelling
- c) Describe two measures that can be used to protect an Information System of a company from Illegal access. (2 marks)
- c) State two Input control methods with an example each (2 marks)
- d) What is handshaking? (1 mark)