0796/2/2022
ICT A/L

SOUTH WEST REGIONAL MOCK EXAMINATION
GENERAL EDUCATION

THE TEACHERS' RESOURCE UNIT (TRU)
Cellule d'appui à l'action Pédagogique

IN COLLABORATION WITH
En collaboration avec

THE REGIONAL INSPECTORATES OF PEDAGOGY AND

THE SUBJECT TEACHERS' ASSOCIATIONS (STA)

Monday, 04/04/2022   ADVANCED LEVEL

Subject Title	Information and Communication Technologies
Paper Number	Paper 2
Subject Code Number	0796

TWO HOURS

INSTRUCTIONS TO CANDIDATES:

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 are reminded of the necessity for good English and 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 NOT allowed

1. i) Mr. Paul owns a computer training center which has about 20 computers. He has trainees on basic computer operation in Word processing, Spreadsheet, Desktop publishing, and Presentation software. Mr. Paul was faced with challenge of always moving round in order to follow up the activities of the trainees. He also had to go through the stressful procedure of collecting trainees' work using some removable storage media to his own machine for evaluation. A network technician had to convince him to setup a star network topology.

    a) What is computer network? *(1mark)*

    b) Briefly explain any two advantages and two disadvantages of putting the computer
       in a network over standalone computer systems. *(2marks)*

    c) Briefly explain one importance of each of the application software highlighted in the
       scenario above to the trainees *(4marks)*

    d) Explain one device needed for him to realize the star network instead of any other topology *(2marks)*

    ii) Explain difference between the following terms in data transmission

    a) Parallel and serial transmission *(2marks)*

    b) Synchronous and asynchronous transmission. *(2marks)*

    iii) a) What is file extension? *(1mark)*

    b) Copy and complete the table below *(3marks)*

FILE TYPE	FILE EXTENSION	EXAMPLE OF SOFTWARE USED IN OPENING SUCH FILE
		Microsoft Excel
	.MP4	
Portable Document Format		

2. i) Briefly describe the following:

    a) Relational database. *(1mark)*

    b) Flat file database. *(1mark)*

    c) An entity in database management *(1mark)*

    ii) a) State and explain the three constructs used to express an algorithm. *(3marks)*

    b) Write an algorithm to compute the average of three numbers using pseudocode *(3marks)*

    iii) a) Define the term computer crime ? *(1mark)*

    b) Briefly explain any three common computer crimes and some measures put in place to
       fight the crimes identified. *(3marks)*

    iii) A teacher intends to make use of ICT tools to teach and also evaluate his students.

    a) State the type of application software that can used to prepare and present lessons to students in a large hall.
       Give an example of such application software. *(2 marks)*

    b) Give an example of the application software that can used to analyze the students marks *(1mark)*

    c) Name two (2) hardware components that might be needed to prepare lessons for presentation to students
       in a hall. *(1mark)*

3. i) a) Briefly explain the three main components of the CPU   *(3marks)*
    b) With the use of a sketch diagram, name and describe the stages involved in the
        CPU instruction cycle.   *(5marks)*
    c) Explain what you understand by a computer memory   *(2marks)*

    ii) a) What is an Operating Systems?   *(2marks)*
    b) State and explain two types of Operating Systems. List two families of operating systems   *(3marks)*
    c) What is the main difference between GUI and CLI?   *(2marks)*

4. i) a) What do you understand by information processing cycle?   *(1mark)*
    b) List any four (4) steps involved in the information processing cycle.   *(2marks)*
    c) Briefly describe what is meant by a computer port.   *(2marks)*
    d) List any two (2) input/output device. For each of them, explain how it functions both as
        input and output device at the same time.   *(2marks)*
    ii). a) State the technology that characterized the fourth and fifth generation of computers   *(1mark)*
    b) Explain any two tasks that characterized the 5th generation of computers.   *(3marks)*
    c) Why is Charles Babbage referred to as the father of Computer Science?   *(2marks)*
    d) Define the term computer virus?   *(2marks)*
    e) Describe three indications or symptoms of computer virus attack.   *(2marks)*

5. i) a) Give two characteristics of a computer memory?   *(2marks)*
    b) State and explain two techniques used to connect computers to the internet   *(2marks)*

    ii) Convert
    a) the decimal number 952_{10} to its equivalent in octal (base 8)   *(2marks)*
    b) the octal number 127.54_8 to its equivalent in decimal (base 10)   *(2marks)*
    iii) compute the binary addition of the numbers binary 100111_2 and 11011_2 *(2marks)*
    iv) Given the logic circuit $(A+B) \cup (B \cap \overline{C}) = P$
    a) Use De Morgan's theorem to simplify the logic expression as far as possible.   *(2marks)*
    b) How many inputs are there in the above logic expression?   *(1mark)*
    c) Give a truth table for the above simplified logic expression.   *(4marks)*

6. i) Define
    a) Batch processing,   *(1mark)*
    b) Real time processing.   *(1mark)*
    c) Online processing.   *(1mark)*
    ii) a) Explain the difference data validation and data verification. Give two example of each of the data checks. *(3marks)*
    b) Briefly explain the role of any three components of an information system   *(3marks)*
    c) Briefly explain the waterfall model in system development life cycle? Give one advantage and one disadvantages
       of the waterfall model.   *(3marks)*
    iii) Define the following terms as used in project management
    a) Slack time   *(1mark)*
    b) Mile stone   *(1mark)*
    c) Lag time   *(1mark)*
    d) Project management plan   *(1mark)*
    e) Work breakdown structure   *(1mark)*

7. i) Briefly explain any three advantages of the Internet to the youths of Cameroon.　(3marks)

ii) What is the meaning of the following as used in Computer Science and ICT?
   a) Facebook　(1mark)
   b) Weblog　(1mark)
   c) Search engine　(1mark)
   d) VoIP (Voice over IP)　(1mark)
   e) Video conferencing　(1mark)
   f) Webcasting　(1mark)

iii) Briefly describe any two computer ergonomics problems and the measures to resolve the problems identified in each case.　(4marks)

iv) State four attributes or characteristics of a good computer program.　(4marks)

8. i)a) Briefly explain what is meant by an Integrated Development Environment (IDE). Give one example of an IDE　(2marks)

   b) Explain the difference between coding and encryption as used in computing.　(2marks)

ii) Define the following programming terms:
   a) Subroutine　(2marks)
   b) Polymorphism　(2marks)

iii) Mary and Paul went to the botanic garden and Paul took some pictures with his mobile phone. Paul decides to share the pictures with Mary using the Bluetooth. This scenario depicts a data communication system.

   a) List five (5) components that make up a data communication system　(5marks)

   b) Copy and make a match of the list below with the corresponding four of the components of data communication identified in (a) above.
      - Pictures
      - Paul's mobile Phone
      - Mary's mobile phone
      - Bluetooth　(4marks)