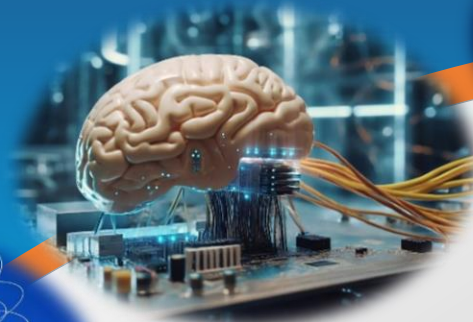




**CARIBBEAN
EXAMINATIONS
COUNCIL**

CAPE[®] COMPUTER SCIENCE

UNIT 1



**Subject Report
with
Exemplars**

May/June 2024

CARIBBEAN EXAMINATIONS COUNCIL

**REPORT ON CANDIDATES' WORK IN THE
CARIBBEAN ADVANCED PROFICIENCY EXAMINATION**

MAY/JUNE 2024

**COMPUTER SCIENCE
UNIT 1**

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INTRODUCTION

This guide has been put together using student responses to the 2024 May–June examination in CAPE Computer Science. Answers have been kept according to the original design of the examination paper.

The examination comprised the following papers.

Paper 01	—	Multiple Choice
Paper 020	—	Structured Essay
Paper 031	—	School-Based Assessment (SBA)
Paper 032	—	Alternative to School-Based Assessment (private candidates)

Approximately 1430 candidates sat the CAPE Computer Science Unit 1 examination in 2024 and 92.35 per cent of these candidates obtained acceptable grades, I–V.

PAPER 01 – MULTIPLE CHOICE

Paper 01 consists of 45 multiple choice questions which cover all the modules of the Cape Computer Science Unit 1 syllabus. The examination consisted of 15 questions from each of the following areas.

Module 1: Computer Architecture

Module 2: Problem-Solving with Computers

Module 3: Programming

Generally, performance on this paper was satisfactory. The maximum score obtained was 45 out of 45 marks and the mean score was 33.31 marks.

PAPER 02 – STRUCTURED ESSAY

Paper 02 consists of six compulsory questions, with two questions from each module.

Generally, performance on this paper was satisfactory. The maximum score obtained was 81 out of 90 marks and the mean score was 36.19 marks.

Question 1

Syllabus Objectives: 1.1, 1.5

This question was based on Module 1 of the syllabus, Computer Architecture. The question examined the candidates' ability to

- state the purpose of the main components of a computer system
- describe the main characteristics of a processor.

The maximum score obtained on the question was 15 out of 15 marks, with one candidate achieving this score. The mean score was 4.32 marks and 3.44 per cent of candidates earned no marks for the question.

Candidate's Response to Part (a) (i)

(a) State the function of EACH of the following registers that are commonly found in microprocessors.

(i) Instruction register (IR)

The instruction register holds the instruction and ~~and operands that are~~ ^{operands that are} currently being decoded ~~or~~ and or executed.

[1 mark]

Examiner's Comments

This part of the question was not well done. Most candidates did not indicate that the IR temporarily holds the instruction that has been fetched from memory and allows the CPU to decode and execute the instruction.

The exemplar shows a correct response.

Candidate's Response to Part (a) (ii)

(ii) Memory address register (MAR)

The memory address register is a register that holds the memory address of the data/instruction that the CPU wants to access from memory.

[1 mark]

Examiner's Comments

This part of the question was not well done. Most candidates did not indicate that the MAR holds the address of the memory location that is to be read from or written to.

The exemplar reflects a correct response.

Candidate's Response to Part (a) (iii)

(iii) Memory data register (MDR)

Memory data register ~~not~~ holds data that is related to the instruction that is to be processed. placed into the instruction register for decoding and execution.

[1 mark]

Examiner's Comments

This part of the question was not well done. Most candidates did not indicate that the MDR temporarily holds data that is being transferred to or from memory, that it acts as a buffer or interfaces with the data bus to facilitate the transfer of data between the CPU and memory.

The exemplar does not reflect an accurate response.

Candidate's Response to Part (b) (i)

(b) (i) Explain how a hard disk differs from RAM in terms of access method and access speed

R stands for Random Access Memory.

A hard disk uses a serial access method which causes the system to go through files/memory sequentially. This ~~decreases~~ increases access speed (takes longer) when compared to RAM. A hard disk is a part of secondary storage. RAM uses a random access method which allows the system to directly access resources, resulting in a decreased/faster access speed when compared to a hard disk. RAM is a part of primary memory.

[3 marks]

Examiner's Comments

This part of the question was done fairly well. Most candidates were able to identify a significant difference between the hard disk and RAM, as they stated that the hard disk provides sequential access and stores data magnetically while the RAM is designed for random access, is volatile, has a faster access speed and low latency. On the other hand, the hard disk is slower than the RAM and has higher latency.

The exemplar reflects a correct response.

Candidate's Response to Part (b) (ii)

- (ii) Explain how RAM differs from a flash drive in terms of volatility and portability.

~~RAM~~ RAM stands for random access memory and is volatile. Volatile means the contents/memory in RAM is only used while the system is operating temporarily stores data and it is cleared when the computer system is turned off. RAM has very low to no portability as ~~RAM~~ RAM itself is contained within the system / on the motherboard. ~~RAM~~ RAM is primary memory. A flashdrive is a secondary storage device that has a universal serial bus (USB) connector / ^[3 marks] port which allows to be inserted into USB ports. A flashdrive is highly portable due to its small size and compatibility with modern devices. Memory contained ~~is~~ in a flash drive is not non-volatile as data can be permanently stored and the contents of the flash drive is not cleared when the device is removed.

Examiner's Comments

Most candidates correctly stated that RAM is a type of volatile memory and that it loses power when the computer is turned off whereas a flash drive is non-volatile and retains the data when the power is turned off.

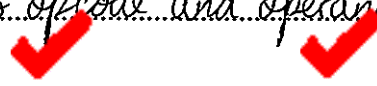
In the exemplar, the candidate provided an accurate description for RAM.

Candidate's Response to Part (c) (i)

- (c) (i) Describe the term 'instruction format'.

• format an instruction takes with regards to opcode + operand

Instruction format is the way in which an instruction is understood by the computer's ISA which with regards to its opcode and operand. For example



[2 marks]

Examiner's Comments

Most candidates did not indicate that the instruction format specifies the operation (opcode) and the operands.

The exemplar reflects a correct response.

Candidate's Response to Part (c) (ii)

(ii) Describe the following addressing modes.

- One-address

In one-address addressing mode, the instruction contains the op-code and the address of one operand. The address may be written using hexadecimal notation.

[2 marks]

- Two-address

In the two-address addressing mode, the instruction contains the op-code and the address of two operands. The addresses may be stored in registers.

[2 marks]

Examiner's Comments

This part of the question was not well done. Most candidates did not indicate the following.

- One-address addressing mode: Has a single explicit address, implicitly uses the accumulator for operations or to give correct example, for example, ADD X.
- Two-address addressing mode: Has two explicit addresses, operations involving two operands with the result stored in one of the addresses.

The exemplar shows a correct response.

Question 2

Syllabus Objectives: 1.2, 1.3, 1.4

This question was based on Module 1 of the syllabus, Computer Architecture. The question examined candidates' ability to

- describe the basic building blocks of a computer
- interpret the interaction among the basic building blocks of a computer
- explain how data is represented in a computer system.

The maximum score obtained on the question was 15 out of 15 marks, with 1.26 per cent of candidates achieving this mark. The mean score 7.47 marks. Approximately five per cent of candidates attained no marks for the question.

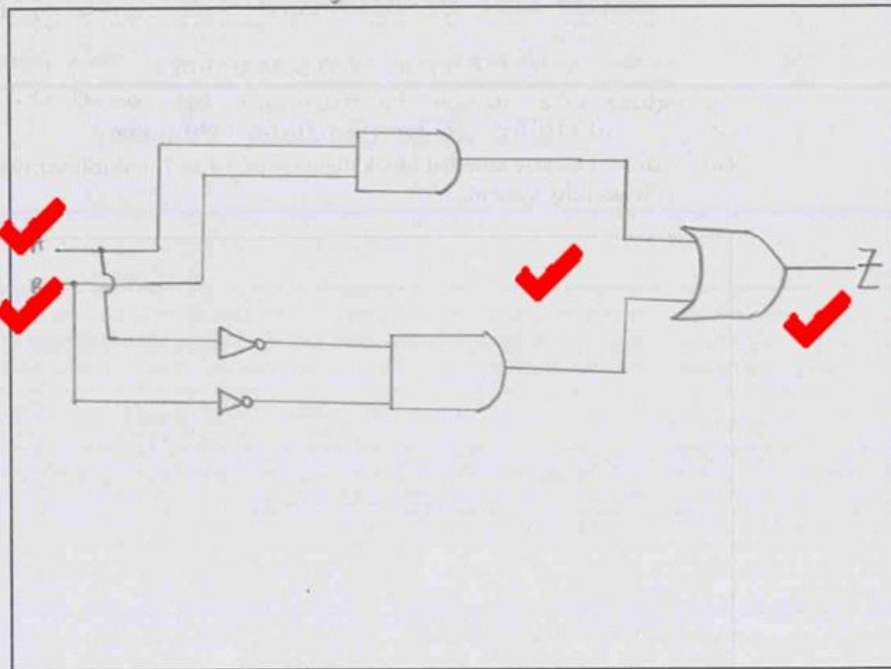
Candidate's Response to Part (a)

2. (a) The following is the truth table for a certain circuit.

Inputs		Output
A	B	Z
0	0	1
0	1	0
1	0	0
1	1	1

Design and draw the circuit diagram represented by the truth table above, using only primary logic gates.

$\text{NOT } (A \text{ XOR } B)$ $(A \wedge B) \vee (\neg A \wedge \neg B)$



[4 marks]

Examiner's Comments

Generally, candidates were able to draw the diagram based on the inputs and outputs. However, there were many variants of the diagram and some candidates drew many more gates than required; however, they were still able to get to the desired output.

The candidate whose response is shown in the exemplar performed well on the question.

Candidate's Response to Part (b) (i)

(b) In a security system, four sensors are used to transmit data to a single line for alarm notification. Each sensor transmits data for one second.

(i) Explain how a multiplexer can be used for the purpose described above.

Each of the four sensors represent an input line ✓
and the alarm ^{notification} represents the single output. Selection ✓
amongst the multiple input lines are dependent on
the signals sent along the select lines. The number of ✓
select lines are determined by the number of direct inputs.
ie. 2^n direct inputs \rightarrow n select lines. This will therefore
allow one sensor to transmit data ~~as~~ at one instance in time for alarm notification. [3 marks]

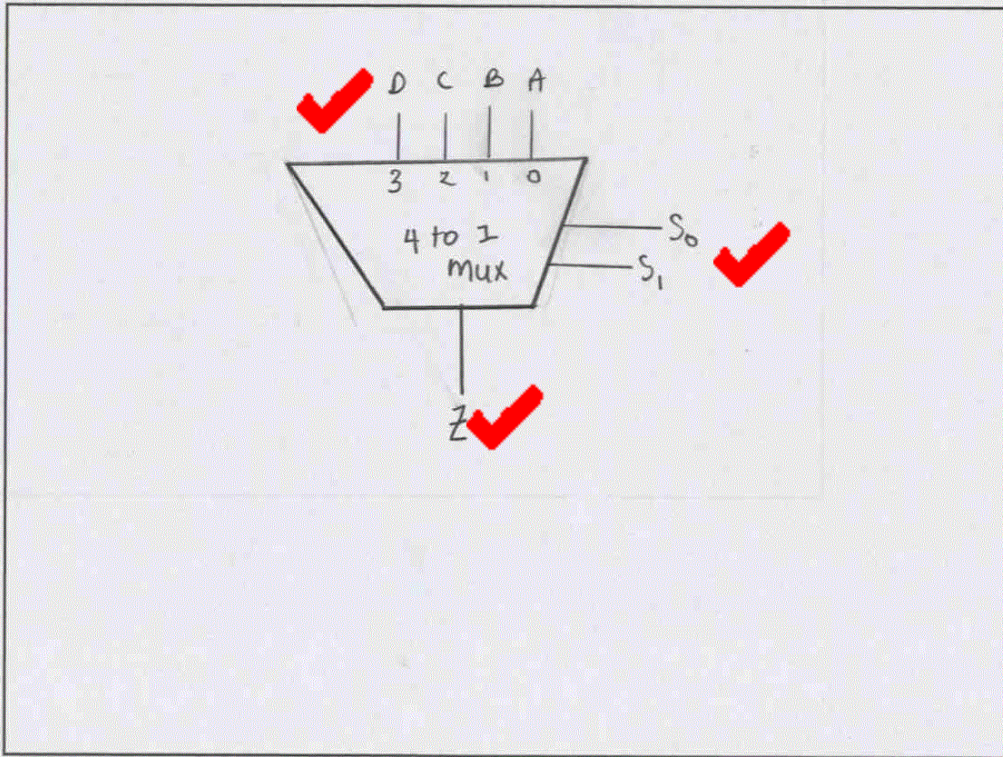
Examiner's Comments

Many candidates understood the concept of the multiplexer but did not link their response to the question.

The candidate whose response is shown demonstrated a theoretical understanding of the concept.

Candidate's Response to Part (b) (ii)

(ii) Draw a clearly labelled block diagram of a 4 to 1 multiplexer that can be used in the security system.



[3 marks]

Examiner's Comments

Most candidates drew the 4 to 1 without including the selection controls.

The exemplar shows a correct response.

Candidate's Response to Part (c) (i)

- (c) (i) State the smallest and largest integers that can be stored in eight bits when signed magnitude representation is used.

Smallest integer 11111111 = -127₁₀ ✓
 Largest integer 01111111 = +127₁₀ ✓

[2 marks]

Examiner's Comments

Many candidates produced responses in the binary format.

The exemplar shows a correct response.

Candidate's Response to Part (c) (ii)

- (ii) Calculate the 8-bit two's complement representation of -87.

$87_{10} \rightarrow \text{Base 2}$			
$\begin{array}{r} 2 \overline{) 87} \\ \underline{43} \\ 2 \overline{) 43} \\ \underline{21} \\ 2 \overline{) 21} \\ \underline{10} \\ 2 \overline{) 10} \\ \underline{5} \\ 2 \overline{) 5} \\ \underline{2} \\ 2 \overline{) 2} \\ \underline{1} \\ 2 \overline{) 1} \\ \underline{0} \end{array}$	01010111 ✓	one's complement	
		10101000 ✓	
		+1	
		10101001 ✓	∴ two's complement
		$= 10101001$	

[3 marks]

Examiner's Comments

Many candidates did not express their responses in 8 bits.

The exemplar shows a correct response.

Question 3

Syllabus Objectives: 2.3, 2.4, 2.9

This question was based on Module 2 of the syllabus, Problem-Solving with Computers. The question examined candidates' ability to

- describe the stages in the problem-solving process
- identify the necessary properties of algorithms that are well designed
- develop algorithms from case problems.

The maximum score obtained on this question was 15 out of 15 marks, with 4.85 per cent of candidates achieving this mark and 7.03 per cent attaining no marks for the question. The mean score was 7.73 marks.

Candidate's Response to Part (a) — Sample 1

- (a) A company called TechWorld sells used laptops and tablets. TechWorld wishes to acquire software to track purchases, the quantities of laptops and tablets in stock and handle customer information. The company has contracted the services of a software company that writes software applications.

Describe any TWO stages that the software company would generally follow when creating the software for TechWorld.

Problem Analysis - Collection of data through the examination of the problem to determine the necessary input, processing and output to solve it.

Identify & Evaluate possible Solutions - Brainstorming and generating all possible solutions to the problem and analyze each using SWOT (Strengths, Weaknesses, Opportunities, Threats)

[4 marks]

Candidate's Response to Part (a) — Sample 2

- (a) A company called TechWorld sells used laptops and tablets. TechWorld wishes to acquire software to track purchases, the quantities of laptops and tablets in stock and handle customer information. The company has contracted the services of a software company that writes software applications.

Describe any TWO stages that the software company would generally follow when creating the software for TechWorld.

- 1) Define the problem - create a clear, concise, unambiguous description of the problem. (problem definition)
- 2) Problem analysis - create functional and non-functional solutions to be implemented when solving the problem.

[4 marks]

Examiner's Comments

Most candidates obtained at least one mark for this part of the question. However, many candidates could not correctly describe what problem definition involves. Most candidates were not able to correctly state the *identify and evaluate possible solutions* and *implementation and review* stages of the problem-solving process. Additionally, some candidates confused the problem-solving process with the programming development life cycle.

The exemplars show correct responses.

Candidate's Response to Part (b) (i) — Sample 1

(b) (i) State TWO properties of well-defined algorithms.

- 1) Finite number of steps ✓
- 2) Steps are clearly stated and are unambiguous. ✓

[2 marks]

Candidate's Response to Part (b) (i) — Sample 2

(b) (i) State TWO properties of well-defined algorithms.

1. It has clearly defined unambiguous steps. ✓
2. There is a finite number of steps. ✓

[2 marks]

Examiner's Comments

Most candidates were able to gain full marks for this part of the question. However, some candidates could not differentiate between an algorithm and a well-defined algorithm. Also, some candidates were not aware that the word *unambiguous* means clear and precise.

The exemplars show correct responses.

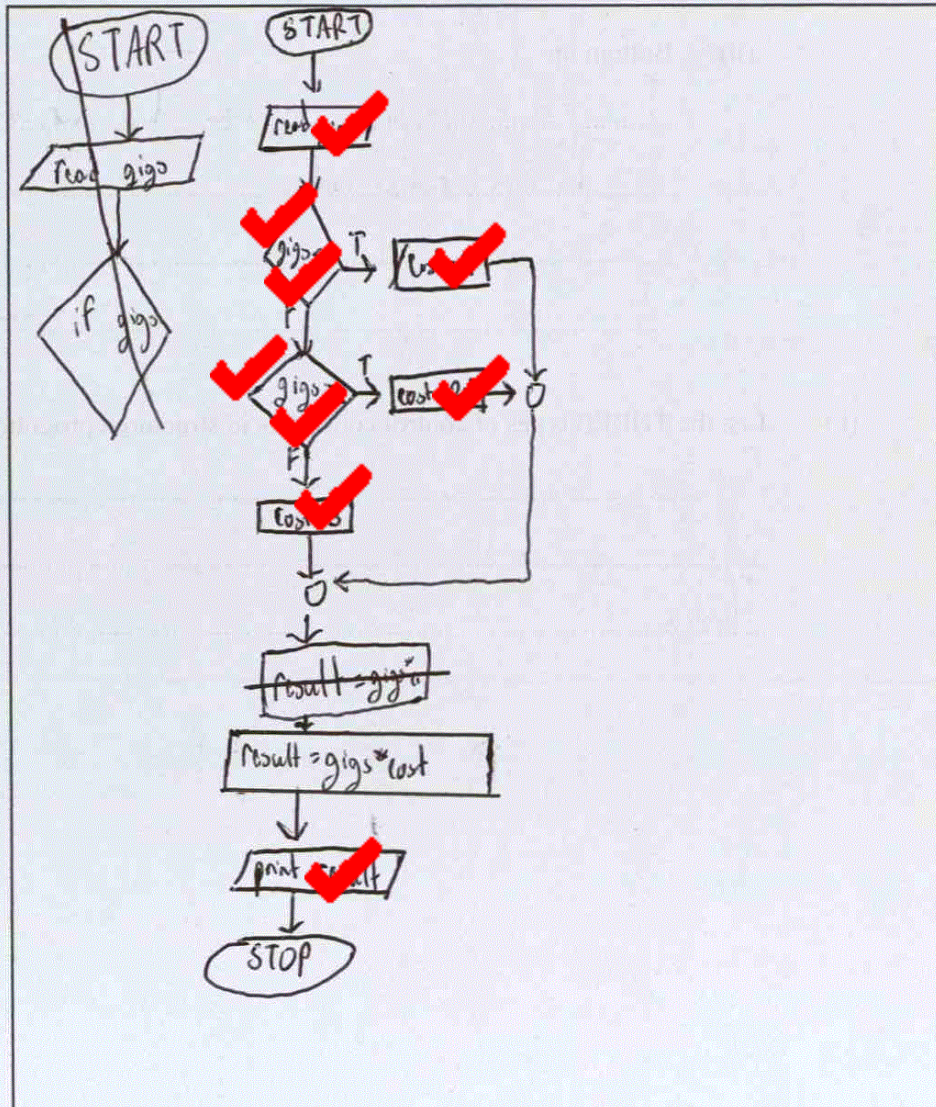
Candidate's Response to Part (b) (ii) — Sample 1

- (ii) A certain cellular company provides the following rates for purchasing cellphone data.

Less than 1 gigabyte = \$4.00 per gigabyte
 Between 1 and 2 gigabytes = \$3.00 per gigabyte
 More than 2 gigabytes = \$2.50 per gigabyte

$gigs < 1$

Draw a flowchart that reads an integer value representing the number of gigabytes used for voice calls and that calculates and prints the cost of calls.



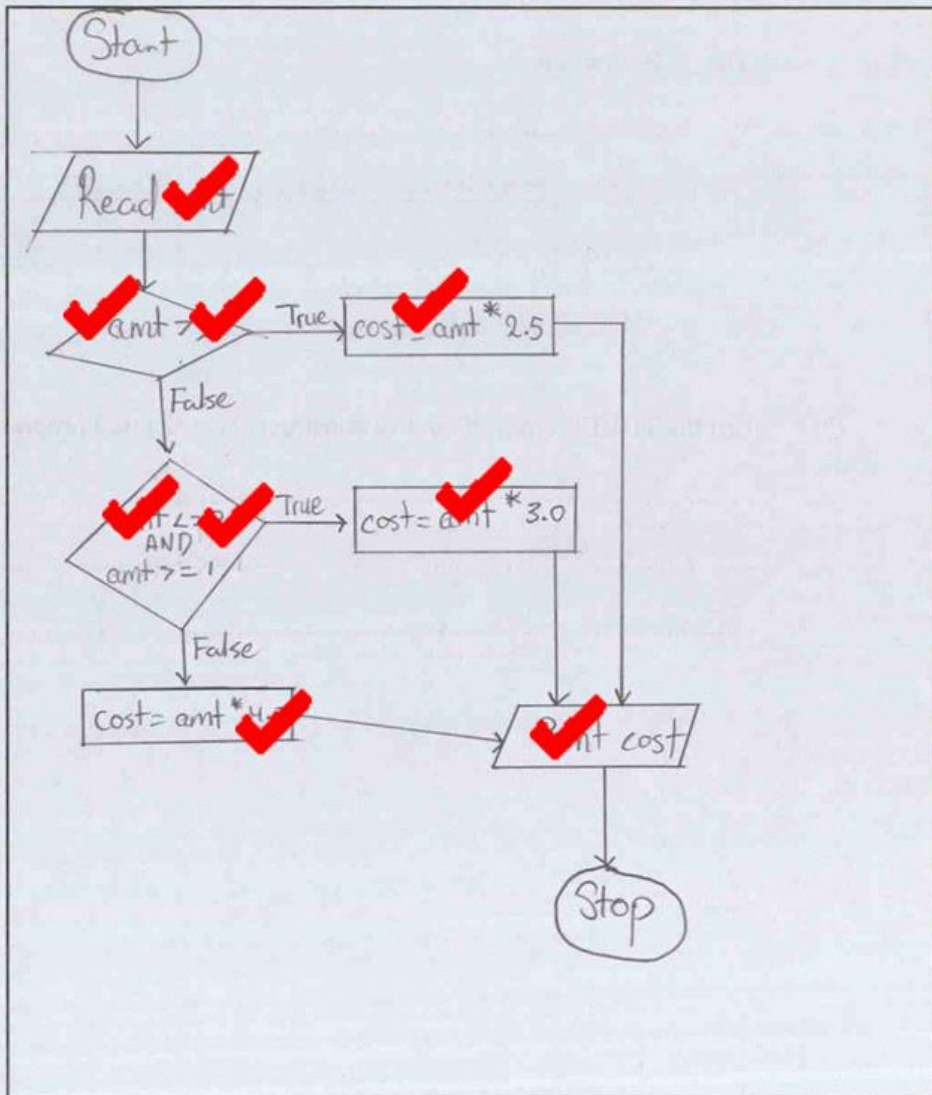
[9 marks]

Candidate's Response to Part (b) (ii) — Sample 2

- (ii) A certain cellular company provides the following rates for purchasing cellphone data.

Less than 1 gigabyte = \$4.00 per gigabyte
Between 1 and 2 gigabytes = \$3.00 per gigabyte
More than 2 gigabytes = \$2.50 per gigabyte

Draw a flowchart that reads an integer value representing the number of gigabytes used for voice calls and that calculates and prints the cost of calls.



[9 marks]

Examiner's Comments

Most candidates were able to use the correct flowchart symbol for input, output and decision-making. However, some candidates seemed unable to translate the specifications into an algorithm while others did not know how to express nested loops in the flowchart. Many candidates struggled to express the conditions correctly, using the relational operators $<$, $<=$, $>$, and $>=$.

The exemplars show correct responses.

Question 4

Syllabus Objectives: 2.2, 2.7, 2.8

This question was based on Module 2 of the syllabus, Problem-Solving with Computers. The question examined candidates' ability to

- apply approaches to problem solving
- interpret algorithms from case problems
- analyse algorithms from case problems for correctness.

The maximum score obtained on the question was 15 out of 15 marks, with 0.21 per cent of candidates achieving this mark and 11.60 per cent of candidates attaining no marks for the question. The mean score was 5.46 marks.

Candidate's Response to Part (a) (i)

4. (a) Describe the following problem-solving methods.

* (i) Stepwise refinement

After each step is completed there is backflow and allows for each step / stage in the problem solving process to be updated and facilitate for errors to allow for constant refinement at each step.

[2 marks]

Examiner's Comments

Most candidates responded incorrectly to this part of the question, as is also seen in the exemplar. The expected response is as follows: *Stepwise refinement is the process of breaking down a program into a series of major steps which are further broken down into a series sub-steps.*

Candidate's Response to Part (a) (ii)

(ii) Bottom up

The problem is broken down into smaller, more
managable pieces and ^{is} then expanded & and
combined later ^{to} view the entire picture /
overview of the problem as ^{one whole problem as} it progresses into
each stage of the problem solving process. [2 marks]

Examiner's Comments

Most candidates responded incorrectly to this part of the question.

The exemplar shows a correct response.

Candidate's Response to Part (b)

(b) List the THREE types of control constructs in structured programming.

1) Sequence ✓
2) Iteration ✓
3) Selection ✓

[3 marks]

Examiner's Comments

Most candidates responded correctly to this part of the question.

The exemplar shows a correct response.

Candidate's Response to Part (c) (i)

(c) Consider the following algorithm.

```
IF (num > 1)
    IF (num == 3)
        PRINT "RED"
    ELSE
        PRINT "BLUE"
    ENDIF
ENDIF
PRINT "GREEN"
```

Write the output of the algorithm when

(i) num = 1

GREEN

Examiner's Comments

Most candidates responded well to the question.

The exemplar shows a correct response.

Candidate's Response to Part (c) (ii)

(ii) num = 2

BLUE GREEN

Examiner's Comments

Most candidates responded well to the question.

The exemplar shows a correct response.

Candidate's Response to Part (c) (iii)

(iii) num = 3

RED GREEN ✓+

Examiner's Comments

Most candidates responded well to the question.

The exemplar shows a correct response.

Candidate's Response to Part (d)

(d) Complete the trace table for the following algorithm.

```

x = 9
y = 2
while (x > y)
    y = y + 1      2 > 2
    x = x - 1      8 > 3
    Print x
    Print y       7 > 4
End while        6 > 5
    
```

Iteration	x	y	Print
1	9	2	8 3 ✓
2	8	3	7 4 ✓
3	7	4	6 5 ✓
4	6	5	5 6 ✓
5	5	6	✓

[5 marks]

Examiner's Comments

Most candidates struggled with this part of the question. They did not use the initial value; therefore, they gave an incorrect response.

The exemplar shows a correct response.

Question 5

Syllabus Objectives: 3.8, 3.10, 3.11

This question was based on Module 3 of the syllabus, Programming. The question examined candidates' ability to

- implement algorithms to solve a given problem
- develop good programming style and documentation
- use text files to store data and records.

The maximum score obtained on the question was 15 out of 15 marks, with 0.91 per cent of candidates achieving this mark and 1.05 per cent of candidates attaining no marks. The mean score was 6.78 marks.

Candidate's Response to Part (a) (i)

- (a) (i) Define the term 'debugging'.

Debugging is the process of identifying and
correcting errors in a code.



[1 mark]

Examiner's Comments

Candidates responded well to the question. Most of them were able to give a correct response, as shown in the exemplar.

Candidate's Response to Part (a) (ii) — Sample 1

(ii) State how EACH of the following can be used to create maintainable code.

- Indentation

Indentation allows for easy following of how the code is to run and makes the code look neater. ✓

- Comments

Comments allows persons to understand what the code is about ✓ in terms of, for eg., what was inputted, what is to be calculated and what is to be executed and outputted.

[2 marks]

Candidate's Response to Part (a) (ii) — Sample 2

(ii) State how EACH of the following can be used to create maintainable code.

- Indentation

It can assist in readability of code,
allowing it to have structure

- Comments

They let the maintainers read what
a function or piece of their code
does without having to run it themselves

[2 marks]

Examiner's Comments

Most candidates performed well on this part of the question. Responses that were accepted include *it made the code look neater* and *it allowed other persons to be better able to understand the code without having to run it themselves*.

The response shown in the exemplar earned full marks.

Candidate's Response to Part (b)

(b) Consider the following code segment.

```
Line 1.    int a, b;  
Line 2.    for (a = 1; a <= 5; a) .  
Line 3.        for (b = 1; b < a; b = b + 1)  
Line 4.            printf ("%s", b);  
Line 5.    printf (\n);
```

Identify the THREE errors in the segment. State the lines in which the errors occur and rewrite the lines correctly.

Line 2 ✓
for (a=1 ; a <= 5 ; a++) ✓

Line 3
for (b=1 ; b < a ; b++)

Line 4 ✓
printf ("%d" , b); ✓

[6 marks]

Examiner's Comments

Many candidates scored full marks for this part. However, some candidates responded incorrectly. In some cases, candidates correctly identified lines 2, 4 and 5 as the incorrect lines but were unable to rewrite the correct code. Many candidates failed to recognize the error in line 5 whereby the newline character should have been enclosed in quotation marks `printf("\n")`.

Some candidates incorrectly thought that adding a semicolon at the end of lines 2 and 3 was the correction needed. Many candidates incorrectly placed an ampersand before the variable "b" in line 4, instead of changing the escape character `%s` to `%d`, resulting in the loss of a mark. Many candidates were able to correctly increment the variable `a` in line 2 by stating either `a = a + 1` or `a++`.

The exemplar shows a partially correct response. The expected response is as follows.

Line 2: `for (a=1; a<=5; a++)`

Line 4: `printf("%d", b);`

Line 5: `printf("\n");`

Candidate's Response to Part (c) (i)

(c) Write C code to perform the following file operations.

(i) Read `fopen *FILE "file.txt", "r" ;`
.....
.....

[2 marks]

Examiner's Comments

Generally, candidates did not respond well to the question. Many of them either did not know the file operations or used them incorrectly. Candidates were required to correctly declare the file pointer for the first mark and to use the fopen (file, "filename.txt", "r") function to allow for the reading of the files. Candidates earned one mark for the declaration of the file pointer in any form.

The exemplar shows a partially correct response. The expected response is as follows.

```
FILE * filePointer;  
filePointer = fopen("fileName.txt", "r");
```

Candidate's Response to Part (c) (ii)

(ii) Append `FILE * ptr ;`
`fopen = FILEptr ("file.txt", "a");`
.....
.....

[2 marks]

Examiner's Comments

Similar to the previous question, candidates responded poorly to this question. One mark was allocated for correctly declaring the file and the other mark for employing the correct fopen function.

The exemplar shows a partially correct response. The expected response is as follows.

```
FILE *filePointer;  
filePointer= fopen("fileName.txt", "a");
```

Candidate's Response to Part (c) (iii)

(iii) Close FILE *inputfile;
inputfile = fopen("file.txt", "w");
fclose("file.txt");

[2 marks]

Examiner's Comments

To gain the first mark, this question also required that the file pointer be declared and for the second mark that the fclose (file) function close the pointer. Most candidates closed the file correctly but did not explicitly declare the pointer. Overall, the question was poorly done.

The exemplar shows a partially correct response. The expected response is as follows.

```
FILE *filePointer;  
filePointer= fopen("fileName.txt", "w");  
fclose(filePointer);
```

Question 6

Syllabus Objectives: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.12

This question was based on Module 3 of the syllabus, Programming. The question examined candidates' ability to

- identify the characteristics of different programming paradigms
- explain how assemblers, compilers, virtual machines and interpreters are involved in the execution of high-level programming languages
- assign values to declared variables
- use input and output statements
- use conditional and iterative control constructs
- use arrays in programs
- apply the techniques of structured decomposition to reorganize a program into smaller pieces
- explain the need for different programming languages.

The maximum score obtained on the question was 15 out of 15 marks, with 0.21 per cent of candidates achieving this mark and 11.38 per cent of candidates attaining no marks. The mean score was 4.43 marks.

Candidate's Response to Part (a) — Sample 1

- (a) Differentiate between 'object oriented' and 'functional' programming languages.

Object oriented programming uses classes and objects to store data which are manipulated using methods/procedures to facilitate dynamic programming. Functional programming separates code into modules ^{which are called separately} to allow for easy debugging and code modification. [2 marks]

Candidate's Response to Part (a) — Sample 2

- (a) Differentiate between 'object oriented' and 'functional' programming languages.

Object orientated programming languages focus on objects and classes in the code while functional programming languages focus on breaking the code down into functions. [2 marks]

Examiner's Comments

Candidates responded well to the question, as shown in the exemplars.

Candidate's Response to Part (b) (i) to (iii) — Sample 1

(b) Describe the following stages of the program translation process.

(i) Lexical analysis

The conversion of the code into tokens.



(ii) Syntax analysis

The code is checked for syntax and syntax errors.



(iii) Code generation

The ~~code~~ source code is converted into machine language.



[3 marks]

Candidate's Response to Part (b) (i) to (iii) — Sample 2

(b) Describe the following stages of the program translation process.

(i) Lexical analysis

Breaks up the source code into a series of tokens or keywords (tokenization).
(a keyword may include printf). Whitespace and comments are removed.

(ii) Syntax analysis

Checks for conformity of the source code to the rules of the programming language.
eg. int c; is a syntax error as there is no semicolon.

(iii) Code generation

Is the formation of machine code which can run on any computer, after ~~code~~ is optimized. It produces an executable file.

[3 marks]

Examiner's Comments

Most candidates responded well to the question, as shown in the exemplars.

Candidate's Response to Part (c) — Sample 1

- (c) Using TWO appropriate examples, explain the need for different programming languages.

Different programming languages are needed as each language specializes in a particular task/field. ~~as~~
Examples being: Python for data analysis and Java for game development

[3 marks]

Candidate's Response to Part (c) — Sample 2

- (c) Using TWO appropriate examples, explain the need for different programming languages.

Python, C++ for gaming, ~~this the structure~~
structure of these languages are designed in
a way ideal for gaming programs -
HTML, Java/JavaScript, the structure of these
languages are ideal for web-development [3 marks]

Examiner's Comments

Most candidates responded well to the question. The exemplars show a response that received partial marks and one that received full marks.

Candidate's Response to Part (d) — Sample 1

- (d) Write a C function, *maximum*, that accepts two parameters, an integer array (*arr*) and an integer variable (*size*) indicating the size of the array. The function should print the maximum value in the array and should not return a value.

```
Void maximum (int arr [ ], void size)
{
    int x; max=0;
    for ( x=0; x < size; ++x)
    {
        if (arr [x] > max)
            max = arr [x];
    }
    printf (" maximum value = %d", max);
}
```

Candidate's Response to Part (d) — Sample 2

- (d) Write a C function, maximum, that accepts two parameters, an integer array (arr) and an integer variable (size) indicating the size of the array. The function should print the maximum value in the array and should not return a value.

linear search →

```
int void maximum (int arr [ ], int size) {  
    int max = 0, i = 0; ;  
    for (i = 0; i < size; i++)  
        if (arr [i] > max) {  
            max = arr [i];  
        }  
    }  
    printf ("The maximum value in the  
    array is %d", max);  
}
```

Examiner's Comments

Candidates responded well to this question. The first response earned five of the seven marks and the second earned six of the seven marks. The expected response is as follows.

```
void maximum(int arr[ ], int size)  
{  
    int x;  
    int max = arr[0];  
    for (x = 1; x < size; x++)  
    {  
        if (arr[x] > max)  
            max = arr[x];  
    }  
    printf("maximum is %d", max);  
}
```

PAPER 031 – SCHOOL BASED ASSESSMENT

The School-Based Assessment (SBA), a project-based activity, is undertaken during students' course of study. Students obtain marks for the competence they develop and demonstrate in undertaking their SBA assignments. SBAs are marked out of a total of 60 marks.

The maximum score obtained in Paper 031 was 60 out of 60 marks and the mean score was 46.59 marks.

PAPER 032 – ALTERNATIVE TO SCHOOL-BASED ASSESSMENT

In this paper, the Alternative to School-Based Assessment, candidates are expected to respond to seven questions based on a case study. The tasks are similar to those that school candidates would normally complete and submit for the SBA. This paper carries a total of 60 marks.

In 2024, four candidates sat this paper. The maximum score obtained was 29 out of 60 marks and the mean score was 19.50 marks.