

MAURITIUS EXAMINATIONS SYNDICATE

NCE 2023GRADE 9

Information and Communications Technology

Introduction

In October 2023, the third edition of the National Certificate of Education (NCE) assessment was administered to a total 14324 candidates. This includes candidates of Grade 9 from the regular programme and candidates from the Grade 9+ of the extended programme.

The NCE ICT Assessment assesses skills and competencies acquired by candidates from Grade 7 to Grade 9/Grade 9+. Candidates are assessed on the learning objectives spelt out in the Teaching and Learning syllabus (TLS, MIE 2016). The 2023 ICT assessment catered for students of all abilities, with different types of questions to allow each candidate to demonstrate the competencies that he/she has acquired after nine years of continuous schooling.

This report focuses on the performance of candidates in the 2023 ICT Assessment. It highlights the difficulties which candidates encountered and suggests possible ways of improving future candidates' performance. Overall, this Grade 9 ICT Examiners' report serves as a valuable tool for teachers, students, and curriculum developers, providing insights into exam structure, common mistakes, student performance, curriculum gaps, and curriculum development.

It is recommended to read this report in conjunction with the question paper for the assessment.

Paper Overview

The NCE ICT Assessment consists of two sections and 11 questions. The duration of the paper is 1 hour 45 minutes and carries a total of 100 marks. The paper is graded starting with items of low difficulty level to items requiring higher order thinking skills.

Table 1 gives a breakdown of the paper.

Table 1: Breakdown of the NCE ICT Assessment

Section	Question number	Marks
A	1 to 5	50
В	6 - 11	50

The Assessment Objectives

Three assessment objectives, namely knowledge and comprehension, application and

analysis serve as a foundation to the design of the ICT Assessment.

AO1: Knowledge and Comprehension (50%)

Questions assessing knowledge and comprehension evaluate the ability of candidates to

recall concepts and facts related to ICT.

AO2: Application (30%)

Questions assessing application focus on learners' ability to apply acquired knowledge and

competencies in ICT. For example, candidates are assessed on their ability use web tools

for e-discussions.

AO3: Analysis (20%)

Questions assessing reasoning require candidates to make judgements and formulate

appropriate strategies in solving problems in ICT.

General Comments

The difficulty level of the 2023 ICT assessment paper was comparable to that of 2021-2022.

It is worth pointing out that the types of questions set, particularly the first few questions

proved to be more accessible to the majority of candidates. More illustrations and visuals

were included in the paper and the reading load was decreased. Students having difficulties

in reading were thus able to demonstrate their ICT knowledge and skills more confidently.

The paper also provided some questions in Section B requiring candidates to demonstrate

their reasoning and analytical skills.

The percentage of candidates obtaining a grade 6 or better increased from 89.7% in 2022 to

96.3% in 2023. The percentage pass for girls was 97.9% while the percentage pass for boys

was 94.6%.

Item analysis indicates that objective-type questions such as Multiple-Choice Questions, fill-

in-the blanks and matching questions set in Section A of the assessment and requiring basic

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knowledge of facts and concepts were well received. These items allowed candidates to score marks and were more accessible to the majority of the candidates.

On the other hand, candidates struggled with items in Section B. Those items required them to demonstrate deeper understanding and reasoning. For instance, items on databases, spreadsheet and programming were found to be particularly challenging by many candidates. They highlighted candidates' lack of confidence and inadequate mastery of the subject.

There were some well-presented scripts. Candidates appeared to have had sufficient time to complete the paper. However, many scripts were found to be incomplete with answer spaces left blank, especially in Section B.

A word on the Extended Stream

The percentage of the number of candidates obtaining a grade 6 or better in the Extended Stream increased from 35.9 % in 2022 to 66.8% in 2023.

An increase in the use of illustrations and visuals, the use of simple language and the types of questions set made the NCE ICT assessment were more accessible. Candidates were given a fair opportunity to demonstrate the skills and competencies that they have acquired in ICT. The section A of the paper was quite well-answered, but the items in Section B were often ignored and left unattempted.

Key messages

- (1) It is important that students are able to link different knowledge from different topics.

 Knowledge from other topics are often required when answering certain questions.
- (2) Candidates are advised to use appropriate technical terms when answering questions.
- (3) The following areas were particularly challenging to candidates.

Spreadsheet

Candidates struggled to understand:

- Formula, particularly those including IF.
- the values returned by functions such as COUNTIF ().

Databases

- Candidates seemed unfamiliar with terms such as records, fields, or primary key.
- The interpretation and filling of the query by example grid is problematic.

Practical problem solving and programming

Candidates had difficulties in:

- o understanding terms such as sequence and selection.
- filling of the trace table where they cannot differentiate between the variable and the values to be written.
- writing of programming language code

Specific Comments

Section A

Question 1

This question comprised 15 multiple choice questions. They were generally well-answered. They were set at the basic level assessing mainly knowledge and comprehension.

Parts (j), (m) and (o) proved to be particularly challenging for candidates of the extended programme.

Table 2 lists the answers to the items in Question 1.

Table 2: Answer key to the items in Question 1

Item Number	Key	Item Number	Key
(a)	D	(i)	С
(b)	D	(j)	В
(c)	С	(k)	В
(d)	Α	(I)	С
(e)	С	(m)	D
(f)	D	(n)	D
(g)	С	(o)	Α
(h)	D		

The performance of candidates in general was good.

Part (a)

Most candidates successfully identified the printer as a device that produces a hard copy.

Part (b)

The majority of candidates could recall that a laptop was a microcomputer.

Part (c)

Most candidates, including those from the extended programme seemed to be familiar with a headphone.

Part (d)

This part was well answered by the majority of candidates. They successfully identified the close button.

Part (e)

Performance of most candidates was satisfactory. They correctly recognized a pen drive as a secondary storage device.

Part (f)

Candidates were expected to recognise the formatting applied to the word 'March' in the following date:

29 **March** 2022

Although many were able to choose the correct **option D**: Bold and Underline, quite a few chose **option B**: Underline. This indicates that some candidates rushed to choose an option and thus did not notice that the word 'March' was both in bold and underlined.

Part (g)

This was the least well-answered part of this question. Many candidates did not know the exact meaning of a *backup*. They wrongly chose *option D*: *print a copy of*. This indicates the misconception that some candidates consider a hard copy as a backup. *Option C*: *keep a copy of*, was the expected answer.

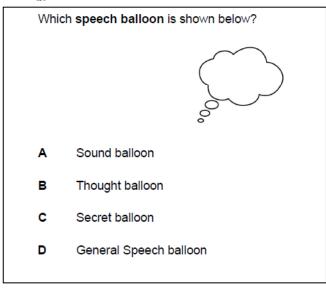
Part (h)

Recognising Google as a search engine was not a challenge to most candidates.

Part (i)

Item analysis points out that 25% of the candidates had difficulties in identifying the Enter Key. They tend to opt for the space bar.

Part (j)



More than 25% of candidates confused between the thought balloon and the General Speech balloon. They could not recognise the correct speech balloon which was illustrated.

Part (k)

Most Candidates were able to identify the correct sitting posture.

Part (I)

Identifying Android as an operating system used in smart phones was quite easy for candidates.

Part (m)

Most candidates demonstrated understanding that 'hacking a computer' is a computer crime.

Part (n)

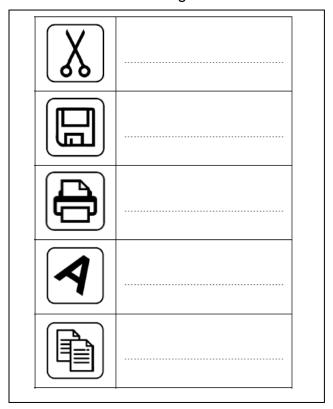
Many candidates performed well in this part. They knew that the System Security Management helps to prevent unauthorized access to a computer.

Part (o)

Although many candidates chose the correct tab (Crop) used to remove unwanted parts of a picture, some candidates wrongly chose option B which was the illustration of *Format Painter*.

Question 2(a)

This item was well-received by most of candidates. They were expected to label icons used in Word Processing. A list of words was given.



Most candidates appeared familiar with the icons and could easily identify the icons representing **Cut**, **Print** and **WordArt**.

However, around one fifth of the candidate's population had difficulties in identifying the **copy** button and they labelled it as **Save**.

Question 2(b)

This was a fill-in-the-blank question with words given. Most candidates fared well in question 2(b). The state ments were straightforward and candidates could easily relate and recall basic facts. A few candidates chose the word 'network' instead of 'power' for part(i).

(i)	If a computer freezes, you should switch off the
ţii)	If you cannot hear the sound, check thevolume level.
(iii)	The speed of a computer is measured in
(iv)	Staring at a computer screen for long hours can lead toeye strain
(v)	The contains information like names, addresses and phone numbers.

Question 3

Ten short statements were given and candidates were expected to tick **True or False** next to them.

	Statement	Answer	Comment
(b)	Wifi means wireless fidelity.	Т	75% of the candidates gave the correct
			answer.
(c)	Page border adds colour to a	F	Well attempted by most candidates.
	page		
(d)	Food and drinks are allowed	F	The majority gave the correct answer.
	in the Computer Lab		
(e)	A handout is a hardcopy of	Т	25% of candidates did not know that the
	PowerPoint slides.		statement was true.
(f)	Online forums are websites	Т	This part was well done by most
	used for debates.		candidates.
(g)	Any information collected	Т	The majority gave the correct answer.
	should be safe.		
(h)	It is ethical to use someone	F	Around 20% of the candidates gave the
	else's password.		wrong answer.
(i)	A spreadsheet is used to	Т	This was the least well-answered part.
	create charts.		Only 50% realised that spreadsheet is
			used to create charts.
(k)	A paper jam prevents a	Т	This part was mostly well answered by
	printer from working properly.		candidates.
(I)	One byte is equal to 4 bits.	F	Only 60% of the candidates knew that this
			statement was false.

Question 4(a)

Candidates were required to classify Digital Camera, Joystick, Blu-Ray Disc and 3D printer as Input, Output or Storage devices.

The candidates' performance on this question was generally satisfactory, and the item analysis indicates that it was within reach for a considerable portion of the candidate population. Some candidates could not identify the Joystick as an input device and a few candidates identified a digital camera as a storage device.

The following answers were expected:

Digital Camera: Input device

Joystick: *Input device*

Blu-Ray Disc: Storage device

3D printer: Output device

Question 4(b)

In this question candidates had to match terms from column A to their correct definitions in Column B. This item was well-answered by many candidates, except for a few parts.

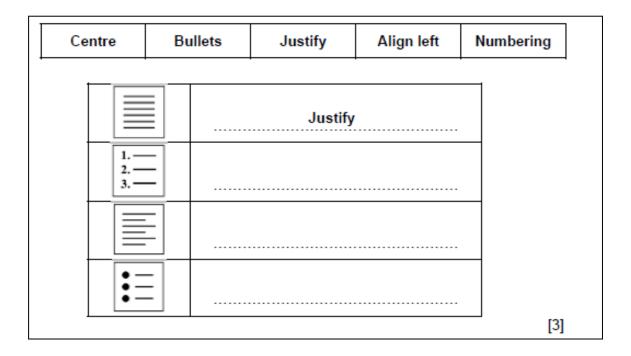
Column A			_	Column B
(i)	Terminal	1	1	is used to enter text.
ii)	Software	2	2	causes pain in wrists and fingers.
(iii)	Keyboard	3	3	is a private network.
(iv)	Repetitive Strain Injury	4	1	is the name given to computer programs.
(v)	Virus	5	5	is a computer connected to a network.
(vi)	Intranet	6	6	is used in automatic cooling systems.
(vii)	Temperature Sensor	7	7	connects networks across the world.
		8	3	is a software that can damage a computer.

The common mistakes that candidates made were:

- Around 25% of the candidates wrongly matched the part(ii) of Column A to definition numbered 8 in Column B. A possible reason could be that in the definition numbered 8, the word software was used.
- Around 40% of the candidates did not seem to know that intranet (part (vi)) is a private network.

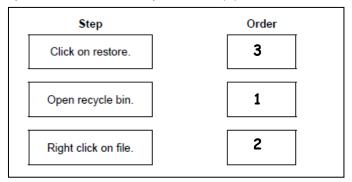
Question 5(a)

Candidates were required to label a few icons from a given list of words and performance was very good for the majority of candidates. The icons were familiar to the candidates.



Question 5(b)

Below is the expected answer for question 5(b).

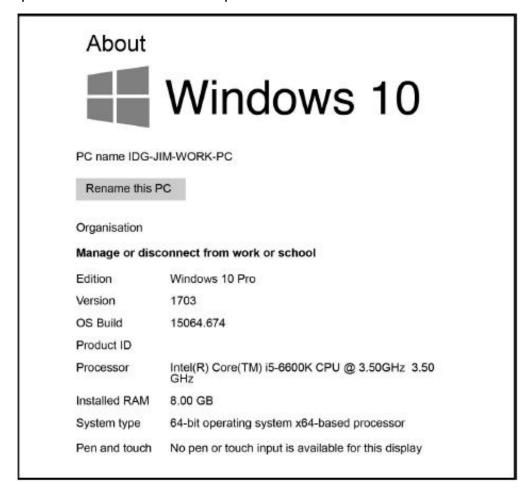


Performance in this part of the question was satisfactory. Three out of five candidates were able to number the steps *to restore a deleted file from the recycle bin*. Among those who could not get full marks, some could order two steps correctly. Below is the expected answer.

Section B

Question 6

The specifications of a computer system were provided. Candidates were expected to study the specifications and answer to questions that followed.



Part (a)

Tick (✓) the correct processor model used in this computer system.				
Intel Core i3	Intel Core i5	AMD Pro		

Most candidates correctly ticked Intel Core i5. Among those who did not tick the correct answer AMD Pro was a common choice.

Part (b)

What is the speed of the processor?

7 out of 10 candidates could correctly figure out that 3.50 GHz was the speed of the processor. It was common to see 'Intel(R) Core (TM) i5-6600K CPU @ 3.50GHz' as an answer. This indicated that those candidates could not extract the correct information from the specifications but realized that this line contains the information required. Candidates must be clear and specific in their answers.

Part (c)

What is the memory size of the computer system?

Most candidates were successful in giving the correct answer 8 GB.

Part (d)

Which edition of the operating system is used in this computer system?

The expected answer was 'Windows 10 Pro'. Around 75% of the candidates gave the correct answer. Common wrong answers were '64-bit operating system' or 'Windows 10'.

Part (e)

Give one function of an operating system.

This was the least well answered item of this question. Only half of the candidates could give a function of an operating system. In some cases, candidates wrote, 'No pen or touch input is available' as an answer. They gave a feature that was not available in the computer system rather than giving a function of an operating system. Candidates should be encouraged to read and understand questions before writing their answers and they should also avoid writing their answers hastily.

Question 7(a)

This fill-in-the blank question with words given proved to be quite challenging for many candidates. More than 60% of the candidates could not score full marks. Many could not figure out the difference between 'page break' and 'section break' and consequently parts (i) and (iii) were wrongly done by many.

For part(ii) many candidates gave 'view' as an answer instead of 'layout'.

Below are the items set for question 7(a) and their expected answers.

(i)	Page break A is used to separate contents between pages.
(ii)	The tab is used to change the orientation of a page from portrait to landscape.
(iii)	A Section break splits pages of a document into parts allowing one to use different formatting on each page.

Question 7(b)

In this section of the question, candidates were presented with the table of contents from a textbook and were required to respond to questions based on it. Overall performance of most candidates was very good.

		Contents
Chapter	1.0	Introduction
Chapter	2.0	Project Requirements
Chapter	3.0	The History of Grammar1
Chapter	4.0	Parts of Speech1
	4.1	Nouns 2
	4.2	Verbs 2
	4.3	Adjectives 2
	4.4	Adverbs
Chapter	5.0	Sentences 3
	5.1	Complex Sentences
	5.2	Compound Sentences
Chapter	6.0	Paragraphs
	6.1	Descriptive
	6.2	Expository
	6.3	Narrative
	6.4	Persuasive
Chapter	7.0	Conclusion

Part (i)

Tick (✔) the cor	rect tab which is used to inse	ert the table of contents?
View	References	Mailings

This was the least well-answered item in this question. Only half of the candidates' population was able to identify the tab which is used to insert table of contents. The most common wrong answer was 'mailings. (*Answer*: References)

Parts (ii) to (iv)

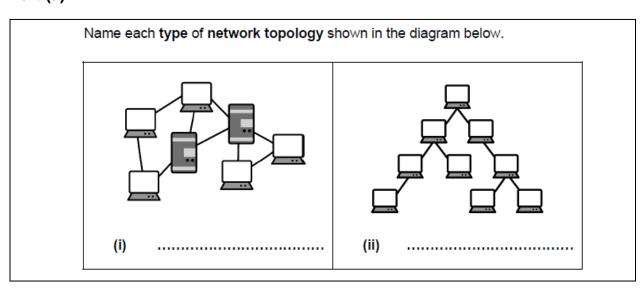
The majority of candidates performed well in part(ii) to part(iv).

(ii)	On which page does Chapter 3 start?
(iii)	How many chapters are there in this textbook?
(iv)	What is the name of the chapter that starts on page 51?
(v)	What is the name of the sub-chapter 6.3?

(Answers: (ii) 12 (iii) 7 (iv) paragraphs (v) Narrative)

Question 8

Part (a)



Around 50% of the candidates could name Mesh and Tree topology respectively. Among those who were not successful, 'Star topology' and 'Bus topology 'were the most common wrong answers given.

Part(b)(i) (ii)

- (i) Explain the term social networking.
- (ii) Give two examples of social networking websites.

Whilst only around 35% of the candidates could explain the term social networking, it is interesting to note that around 60% could successfully give two examples of social networking websites.

Many candidates gave 'communication with friends' to explain social networking.

Part(b)(iii)

(iii) Give two ways to communicate on a social networking website.

The performance was fair for this part. Around 50% of the candidates were successful in giving two ways of communicating on a social networking website.

Part(c)

Give two safe practices that should be adopted when using a social networking website.

Responses to this question did not meet the expected standard. Many candidates gave two security issues instead of safe practices. Only around 40% of the candidates could score full marks.

Question 9

Spreadsheet remains a challenging topic for many candidates who struggled to answer these questions. Many candidates do not seem familiar and lack confidence while dealing with spreadsheet.

Candidates were expected to answer questions, based on a given spreadsheet which showed the data about sales of a JMS Candy Shop.

A	А	В	C	D	E	F
1	JMS Candy Shop					
2	Item	Cost Price	Selling Price	Profit Per Item	Number in stock	Reorder stock
3	Bounty	26.50	28.50	2.00	167	NO
4	Twix	18.00	22.00	4.00	145	NO
5	Galaxy	22.50	25.00	2.50	32	YES
6	KitKat	32.00	32.50	0.50	159	NO
7	Mars	15.50	19.50	4.00	12	YES
8						
9					Items to be reordered	

Part(a)

The expected answers were 'B4' and 'C3' respectively. Less than 40% of the candidates could give the correct answers. They confused between the content of the cells (cell values) and the cell address.

Part(b)

Tick (✓) the correct for Per Item on Bounty.	mula that has been used in ce	II D3 to calculate the Profit
= B3 / C3	= MIN (B3:C3)	= C3 – B3

Around 55% of the candidates ticked the correct answer, C3 - B3.

The most common wrong answer was =MIN (B3:C3).

Part (c)

Write the formula that can be used in cell D8 to calculate the total Profit Per Item.

Only one in three candidates was able to write the correct formula.

The expected answer was =SUM (D3:D7)

Many used the word ADD instead of SUM.

Part(d)

When the number of a particular item is **less than 50**, the shop needs to reorder the stock.

Complete the following formula to be used in **cell F3** to find out whether there is a need to reorder stock or not.

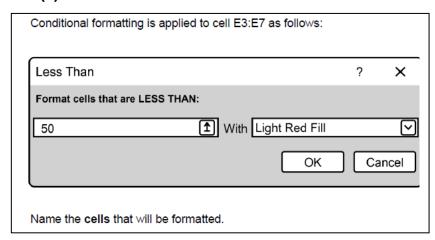
The expected answer was, = IF (E3 < 50, "YES", "NO")

Only around one in ten candidates were successful in scoring full or partial marks.

Many candidates did not attempt this part. In general, candidates were not careful about:

- Writing the formula using uppercase
- The sequence of writing YES / NO
- The inclusion of double quotes

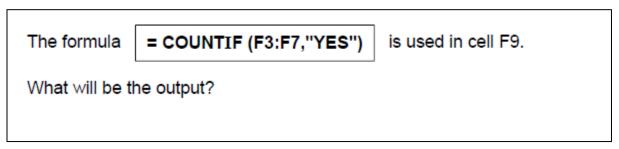
Part (e)



This part was correctly answered by around 50% of the candidates. Some wrote only one correct answer.

The expected answers were, E5 and E7.

Part (f)



Around 30% of candidates could give the correct answer.

Some candidates gave the content of the cells, while others wrote 'YES' as their answer.

Question 10

This question was designed to assess knowledge and understanding of databases. It proved to be problematic for many candidates.

Part(a)

This part was an objective type question, where statements were given and candidates had to decide whether those statements were True or False.

State whether each of the following statements on databases is **True** or **False**.

An example is given.

(i) Retrieving information from a computerised database is difficult. **False**(ii) A primary key is a field which uniquely identifies a record.

(iii) Each row of a database table represents a record.

Many candidates demonstrated stronger performance in this part compared to other spheres of the question. Around 70% of the candidates scored full marks.

However, there are indications that some candidates were not familiar with or encounter problems in understanding terms like 'Primary Key' or 'Record'.

(Ans: (ii) True (iii) True)

Part (b)

In this part, candidates had to answer question based on the computerized database that stores details on the departure of flights shown below. This part proved to be difficult on the whole, suggesting that for many candidates, database is complex and difficult to understand. Candidates of all abilities struggled to attempt questions on databases.

FLIGHT_ID	FLIGHT_NAME	DEPARTURE	LOCATION	DESTINATION
MK-054	Air Mauritius	04:00	Mumbai	Mauritius
MK-001	Air Mauritius	08:00	Mauritius	Rodrigues
AS-102	Air Austral	09:00	St Denis	Mauritius
SP-205	Singapore Airlines	23:00	Mauritius	Singapore
EM-234	Fly Emirates	23:00	Dubai	Mauritius
BA-458	British Airways	07:00	Mauritius	London

Part(b)(i)

How many fields are there in the FLIGHTS table?

Performance was fair. Slightly less than half of the candidates were successful in answering this part. It appears that candidates confused between fields and records.

Many candidates gave '6' as their answers instead of '5'.

Part(b)(ii)

The following	search condition	was entered using a	query by	/ eyamr	ıl۵	arid
THE IONOWING	search condition	was entered using a	quely by	/ Examp	ЛΕ	quiu.

Field	FLIGHT_ID	DEPARTURE	
Table	FLIGHTS	FLIGHTS	
Sort	ASCENDING		
Show	✓		
Criteria		= 23:00	
Or			

Show what the output would be.

Very few candidates demonstrated firm understanding in showing the output.

It was noted that many candidates did not attempt this part. At times, those who tried scored a partial mark. Many candidates failed to order the output and included additional field as part of their answers. Some answers were written in the grid, and not in the answer space.

(Answer: EM – 234 SP – 205)

Part(b)(ii)

This part proved to be challenging for many candidates. Only one third of the candidates scored full marks. Candidates appeared uncertain as to where to incorporate the criteria. However, a handful of candidates were able to earn a partial score.

The expected answer is given below.

Complete the query by example grid below to select and show the name of flights located in Mauritius.			
Field	FLIGHT_NAME	LOCATION	
Table	FLIGHTS	FLIGHTS	
Sort			
Show	✓		
Criteria		= "Maurítíus"	
Or			

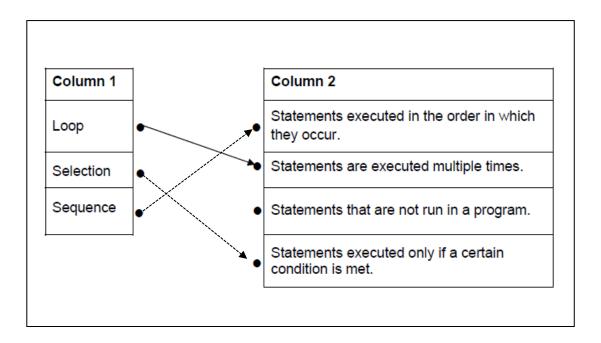
Question 11

Questions on programming are found to be challenging by many candidates at NCE. Performance was quite poor this year as well. It was apparent from candidates' responses that they lacked confidence and did not have a firm understanding of the basics of Programming.

Part (a)

This part required the candidates to match the terms in column 1 to their correct description in column 2.

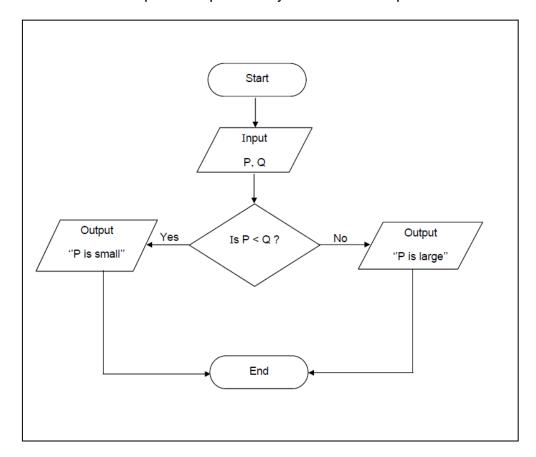
Below is the expected answer.



It was interesting to note that part(a) proved to be quite scoring for around two thirds of the candidates' population. A low number of candidates scored a partial mark.

Part (b)

In this part candidates were required to study and dry run the flow chart shown below. Very few candidates attempted this part. Many blank answer spaces were noted.



The expected answer is given below:

Р	Q	Output
18	6	P is large
6	14	P is small
12	8	P is large

Some common mistakes were:

- · Quotes included
- Writing 'Large' or 'Small'
- Writing 'Yes' or 'No'

Candidates were unsure about how to fill the column for output.

Part (c)

Candidates had to read the Python command below and answer questions that followed.

```
Line 1 >>> totalprice = 2010
Line 2 >>> if totalprice > 2000:
Line 3 >>> print('You get a discount')
Line 4 >>> else:
Line 5 >>> print('You do not get a discount')
```

Performance in this part was relatively poor across all abilities.

Part(c)(i)

What will be the output if the above Python code is run?

Only around 20% of the candidates could answer correctly. A few managed to score a partial mark.

```
(Answer: You get a discount)
```

Part(c)(ii)

At **Line 1**, rewrite the command that will allow a user to enter the value for total price from the keyboard.

Only a handful of candidates could correctly answer this question.

Candidates did not seem to understand the importance of int () as part of the statement.

Answer: total price = input ('Enter Total Price')

Conclusions

The improvement in the overall performance in 2023 is quite encouraging. It is important to encourage students to practice open-ended questions. More emphasis should be laid on topics like Spreadsheet, Databases and Programming.

Questions that were well illustrated with less reading load proved to be very helpful to candidates.