



Index Number:

NATIONAL CERTIFICATE OF EDUCATION

2021-2022

INFORMATION AND COMMUNICATIONS TECHNOLOGY (N540)

Candidates answer on the Question Paper.

TIME: 1 HOUR 45 MINUTES

INSTRUCTIONS TO CANDIDATES

- Write your index number in the space provided above.
- Write in dark blue or black ink. Do not use correction fluid.
- You may use a soft pencil for any diagram, graph or rough working.
- Any rough working should be done in this booklet.
- Do NOT use calculators.
- Answer **ALL** questions.
- This document consists of **11** questions printed on **22** pages, numbered **2** to **23**.
- The number of marks is given in brackets [] at the end of each question or part question.
- The total marks for this paper is **100**.

For Examiners' use													
Question No.	1	2	3	4	5	6	7	8	9	10	11	Total	Signature
Examiner													
Team Leader													
Quality Controller													
CE/ACE													

SECTION A**Question 1 (15 marks)**

Circle the correct answer. Each item carries one mark.

- (i) Which **application software** can be used to view web pages on the internet?



MS Word

A

Google Chrome

B

MS Excel

C

MS Paint

D

- (ii) In a **Word document**, where is the **Header** inserted?

- A** At the top
- B** At the bottom
- C** On the left-hand side
- D** On the right-hand side

- (iii) Which **symbol** is used in flowcharts to represent a **process**?



Diamond

A

Oval

B

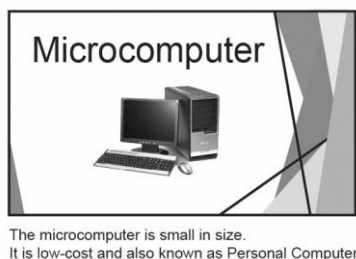
Parallelogram

C

Rectangle

D

- (iv) The figure below shows a print layout from **PowerPoint**. Which type of **print layout** is it?

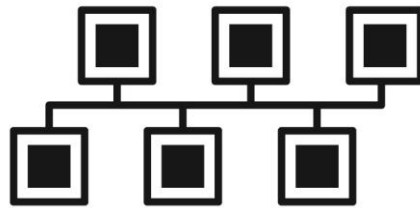


- A** Notes pages
- B** Outline
- C** Handouts
- D** Full page slides
- (v) Which **cell** shows the marks scored by **Malini** in ICT?

	A	B
1		
2		
3	Name	Marks scored in ICT
4	Jamila	52
5	Malini	56
6	Ali	15

- A** A3
- B** A4
- C** B5
- D** B6

(vi) Which **network topology** is shown below?



- A Tree
- B Bus
- C Star
- D Mesh

(vii) Which one of the following is an example of an **online journal**?

- A Wiki
- B Blog
- C Vodcast
- D Chat

(viii) Which function of an **operating system** deals with the allocation of storage space to programs and data?

- A Processor management
- B File management
- C Hardware management
- D Memory management

(ix) Which one of the following **protects personal information**?

- A** Copyright Act
- B** Data Protection Act
- C** Ownership
- D** Plagiarism

(x) Which one of the following refers to the **buying and selling** of goods over the **Internet**?

- A** E-Commerce
- B** Teleworking
- C** E-Banking
- D** E-Learning

(xi) Which type of **speech balloon** is shown below?



- A** General speech balloon
- B** Whisper balloon
- C** Thought balloon
- D** Sound balloon

(xii) Which one of the following is a **set of statements** executed **multiple times** in a program?

- A** Construct
- B** Repetition
- C** Selection
- D** Sequence

(xiii) Which **web service** allows the streaming and downloading of audio files?

- A** Forum
- B** Podcast
- C** Twitter
- D** Wifi

(xiv) What does **ISP** stand for?

- A** International Service Provider
- B** Internet Sites Provider
- C** Internet Service Provider
- D** Internal Service Provider

(xv) Which **field** is used as a **primary key** in a school students' database?

- A** Student phone number
- B** Student date of birth
- C** Student class
- D** Student number

E
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Question 2 (10 marks)

For parts (A) and (B), fill in the blanks with the **correct term** from the lists given below.

(A)

binary	backup	RSI
ergonomic	network	server

- (i) Bad posture when using a computer can cause
- (ii) The use of chairs helps to prevent back pain.
- (iii) A is used in case the original data is lost.
- (iv) A is a computer that provides data to other computers.
- (v) 0s and 1s represent data.

[5]

(B)

computer ethics	terminal	password
plagiarism	web browser	handouts

- (i) A allows a user to view web pages.
- (ii) A is a computer connected to a network.
- (iii) A set of principles that guides the proper use of computers is known as
- (iv) Copying someone else's work and claiming it as your own is called
- (v) Printed copies of slides that a presenter can give to the audience are called

[5]

E
TL
QC
CE

Question 3 (10 marks)

Tick (✓) the correct boxes to show whether the following statements are **True** or **False**. An example is given.

		True	False
a)	An operating system is the most important software in a computer system.	✓	
b)	A paper jam will prevent a printer from working properly.		
c)	Hacking means to gain unauthorised access to a computer.		
d)	The Home Tab allows us to create a table of contents and table of figures.		
e)	A table can be added to a PowerPoint presentation using the Insert tab.		
f)	In a ring topology, each node is connected to a central computer.		
g)	A computer virus is an item of hardware.		
h)	Several plagiarism checkers are freely available on the internet.		
i)	WiFi uses radio waves to provide wireless internet.		
j)	A flowchart is normally read from top to bottom.		
k)	A query in a database is used to input data into a table.		

E

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Question 4 (10 marks)

- (a) Match **Column A** to **Column B** by writing down the corresponding number in the **answer grid** below. An example is given.

Column A	
(i)	Audio overlay
(ii)	Comic strip
(iii)	Error handling
(iv)	LAN
(v)	Software piracy
(vi)	PAN
(vii)	Game addiction





Column B	
1	Playing uncontrollably on a computer over a long period of time.
2	Adding a sound file to a movie.
3	It connects networks across the world.
4	A sequence of images which tells a story.
5	It connects devices for an individual person within a room.
6	One of the functions of an operating system.
7	The illegal copying, distribution and use of electronic materials.
8	A small computer network shared by many users within a building.

Answer Grid

(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
2						

[6]

- (b) **Label** pictures (i) to (iv) by choosing the appropriate term from the list given below.

Mouse	Printer	Compact disc	Microphone	Router
				
(i)		(ii)		
				
(iii)		(iv)		

[4]

Question 5 (5 marks)

- (a) The diagram below shows the **external speakers** of a computer system. There is **no sound** coming from the speakers.



Tick (✓) the three (3) possible solutions to make the speakers work.

1	Check that the cable is plugged to the correct port in the computer system.	
2	Press the ENTER key on the keyboard.	
3	Check the volume level in the computer system.	
4	Run a virus scanner.	
5	Check if the power cord of the speakers is connected to the socket and that power is turned on.	

[3]

- (b) Tick (✓) the correct **key combination** which needs to be pressed to **retrieve a file** which has been deleted accidentally.

Alt + Ctrl + Delete	
Ctrl + Z	

[2]

SECTION B

Question 6 (7 marks)

The table below shows the **specifications** of two laptop computers.

Feature	Laptop A	Laptop B
Operating System	Windows 7	Windows 10
Processor Speed	1.6 GHZ	2.3 GHz
Hard Disk	500 GB	1 TB
RAM	4 GB	8 GB
Wireless Enabled	Yes	Yes
Webcam	No	1.3 MegaPixel
Weight	2.9 kg	1.3 kg

- (a) Which laptop has a **higher processor speed**?

..... [1]

- (b) (i) What is the **memory size** of **Laptop A**?

..... [1]

- (ii) Give **one advantage** that **Laptop B** has over **Laptop A** in terms of **memory size**.

..... [1]

- (c) Which laptop can be used to perform a **backup** of data more easily? Why?

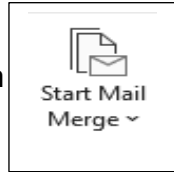
.....
 [2]

- (d) What is the purpose of a **webcam**?

..... [2]

Question 7 (7 marks)

- (a) **Tick (✓)** the correct **tab** that needs to be clicked to access the icon



Mailings tab ☐

Layout tab ☐

Design tab ☐

[1]

- (b) Put 1, 2 and 3 to show the **correct order** in which the following steps have to be carried out to perform a **mail merge**.

Step	Order
Insert fields to merge the two documents.	
Create a mailing list.	
Create a template.	

[3]

- (c) A letter is to be sent to a group of people.

Figure 1 shows the letter with the merged fields and **Table 1** shows the list of Mail Merge Recipients.

Date: 12 August 2022

<<Title>><<Name>><<Surname>>

<<Address>>

<<Town>>

Application for social housing

Dear <<Title>><<Surname>>

Following the decision taken by the Managing Committee of the board, you are requested to take possession of the property papers and key of your apartment <<AptNo>> on <<Date>>.

Thank you.

Yours sincerely,

Hemlata
Secretary

Figure 1: Letter to a Group of People

Table 1: List of Mail Merge Recipients

	Surname	Name	Title	Address	Town	AptNo	Date
	Thomas	Christine	Mrs	Royal Road	Curepipe	256	20/12/22
	Vencatasamy	Ayesha	Miss	Branch Road	Vacoas	123	25/11/22
✓	Peerun	Osman	Mr	Military Road	Port Louis	546	15/12/22

Complete the letter below for the **recipient** indicated by the **tick (✓)** in **Table 1** to show the result of the mail merge.

Date: 12 August 2022

.....

.....

.....

Application for social housing

Dear

Following the decision taken by the Managing Committee of the board, you are requested to take possession of the property papers and key of your apartment
..... on

Thank you.

Yours sincerely,

Hemlata

Secretary

[3]

Question 8 (9 marks)

- (a) Put a **tick (✓)** to indicate whether each statement below refers to the **Intranet** or the **Extranet**.

Statement	Intranet	Extranet
A private network which is accessible to members within an organisation only.		
A private network that allows authorised users from outside an organisation to access it.		

[2]

- (b) What does **VPN** stand for?

.....

[1]

- (c) Give two purposes of a **VPN**.

1.

2.

[2]

- (d) Explain the **purpose** of a

- (i) Network Interface Card (NIC)

.....

.....

[2]

- (ii) MODEM

.....

.....

[2]

E
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Question 9 (10 marks)

Body Mass Index (BMI) is calculated using the following formula:

$$\text{BMI} = \frac{\text{Weight}}{(\text{Height} * \text{Height})}$$

The spreadsheet below shows data about five people.

	A	B	C	D	E
1	Name	Weight (Kg)	Height (M)	BMI	Overweight
2	Sanchita	75	1.68	26.57	
3	Mayur	70	1.75	22.86	
4	Keerthi	85	1.52	36.79	
5	Pierre	63	1.60	24.61	
6	Needah	62	1.60	24.22	
7					

(a) Write down the cell in which you can find the following information:

(i) BMI of 36.79

(ii) Height (M) of 1.68

[2]

(b) **Tick (✓)** the correct **formula** that has been used in cell **D2** to calculate the **BMI** of **Sanchita**.

=sum(B2:C2) ☐

=B2/(C2*C2) ☐

=B2*C2 ☐

[1]

(c) Write the **formula** that needs to be placed in cell **D7** to find the **average BMI**.

.....

[2]

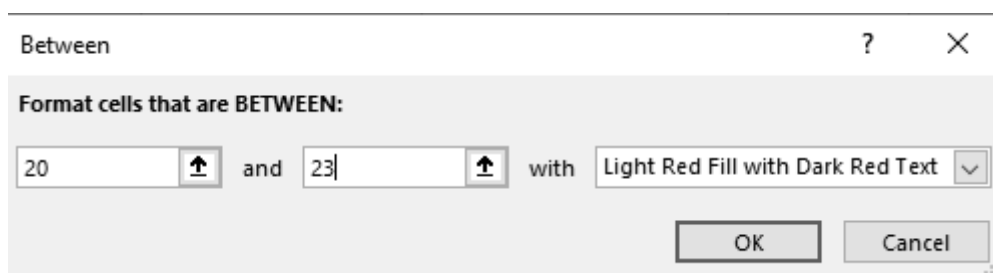
- (d) A **normal** BMI is between 18.5 and 25. A BMI higher than 25 is in the **overweight** category.

Complete the following **formula** to be used in cell **E2** to find whether the BMI is **normal** or **overweight**.

= IF (E2 > ____ "overweight", "_____")

[2]

- (e) **Conditional formatting** is applied to cell **D2:D6** as follows:



Name a **cell** that will be formatted.

[2]

- (f) The formula **= COUNTIF(E2:E6,"Normal")** is used in **E7**.

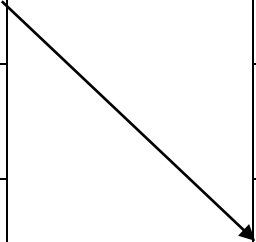
What will be the **output**?

[1]

Question 10 (7 marks)

- (a) Match the term in **Column 1** to its description in **Column 2**.

Column 1	Column 2
Query	Used to enter data in a table.
Form	Used to organise and display data extracted from a table.
Report	Retrieving information from a database.



[2]

- (b) A university has created a computerised database to store details about courses it offers. The **COURSES** table is shown below.

COURSE_ID	COURSE_NAME	YEAR	ROLL	CAMPUS
CS403	BSc Computer Science	2019	40	EBENE
CS401	BSc Software Engineering	2020	24	REDUIT
MGT401	BSc Management	2020	35	CUREPIPE
SOC402	BSc Sociology	2021	32	TELFAIR
PHY404	BSc Physics	2021	25	REDUIT

- (i) How many **records** are there in the **COURSES** table?

.....

[1]

- (ii) The following **search condition** is entered using a **query by example** grid.

Field	COURSE_ID	ROLL
Table	COURSES	COURSES
Sort	DESCENDING	
Show	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Criteria		< 30
Or		

State what will be the output of this **query by example**.

.....
 [2]

- (iii) Complete the **query by example** grid below to select and show the **name of courses** being run at REDUIT.

Field	COURSE_NAME	CAMPUS
Table	COURSES	COURSES
Sort		
Show	<input type="checkbox"/>	<input type="checkbox"/>
Criteria		
Or		

[2]

Question 11 (10 marks)

Weekly pay is calculated using the formula below:

$$\text{weeklyPay} = \text{hourlyPay} * \text{hoursWorked}$$

If weeklyPay exceeds 400 then,

$$\text{weeklyPay} = \text{weeklyPay} + 70$$

An algorithm has to be designed using a **flowchart** to calculate the weekly pay.

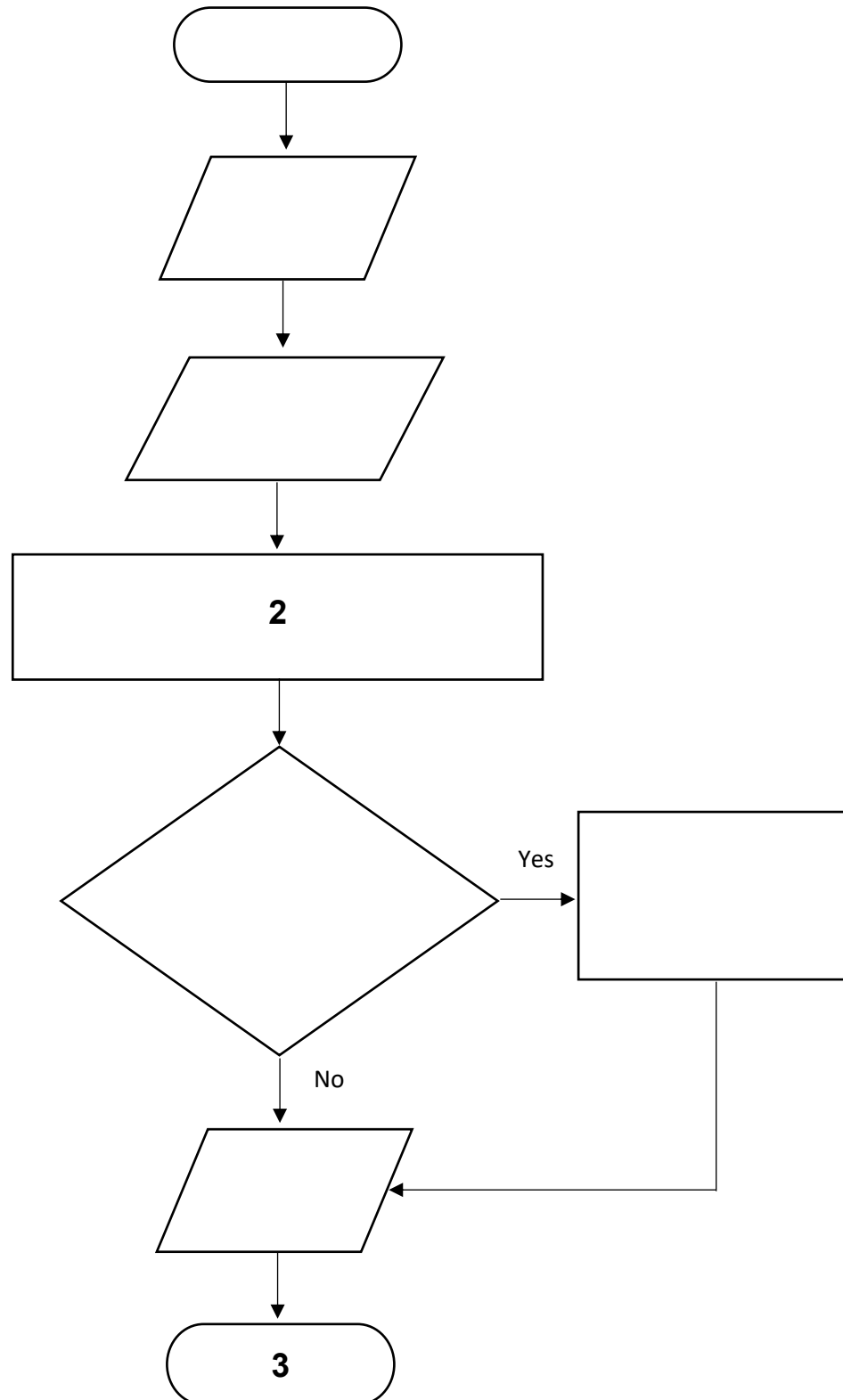
A **list of statements** is provided below.

LIST OF STATEMENTS

1. Input hourlyPay
2. $\text{weeklyPay} = \text{hourlyPay} * \text{hoursWorked}$
3. End
4. Input hoursWorked
5. Start
6. Output weeklyPay
7. $\text{weeklyPay} = \text{weeklyPay} + 70$
8. Is $\text{weeklyPay} > 400$?

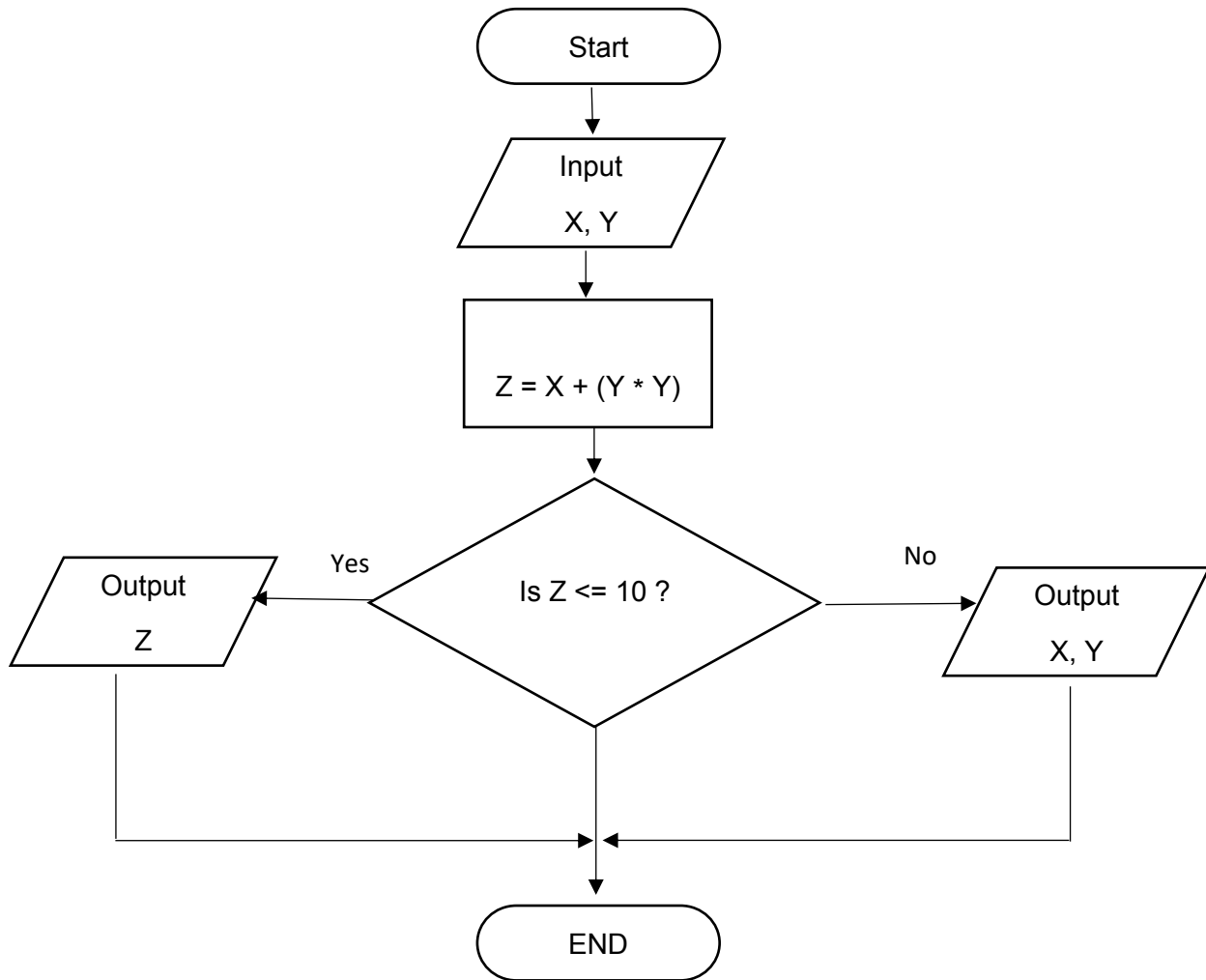
- (a) Using the list of statements provided, insert the **six missing statements in the flowchart below** using the appropriate **number**. Each statement may be used only once.

Two examples are given.



[6]

(b) Study the flowchart below carefully.



For the sets of Input given below, **dry run** the flowchart.

INPUT		PROCESS	OUTPUT
X	Y	Z	
10	2		
4	2		
1	3		
8	4		

[4]

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