



**Royal Institute
International School**

THIRD TERM TEST – NOVEMBER 2023

GRADE – 11 NATIONAL

INFORMATION AND COMMUNICATION TECHNOLOGY - II

Name.....

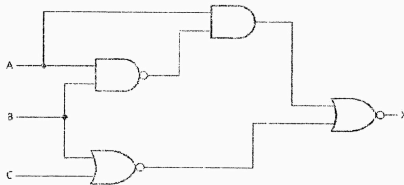
Class.....

Duration: 2 Hours

- ❖ Answer *only five (05) questions*, selecting the *first question and four others*.
- ❖ *First question carries 20 marks and each of the other questions carries 10 marks.*

01.

- (i) State two advantages of flash memory over a DVD – RW(Rewritable).
- (ii) Produce a logic expression for the logic circuit shown below.

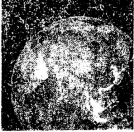



- (iii) Converts the number of bytes in 2 KB into hexadecimal equivalent.
- (iv) What is the purpose of device drivers in an operating system?
- (v) There is very important software that runs on a computer. It manages various resources of the computer. It also lets the users communicate with the computer. This particular software coordinates and fulfils the requirements of all processes with respect to their CPU, memory and storage needs.

A – What is the specific software referred to in the above paragraph?

B – Give one example for it.

(vi) Consider the document segments below formatted in MS Word applying the different techniques.

A - **A** sia is the world's largest and most populous continent. It covers 8.7% of the Earth's total surface area (or 30% of its land area) and with approximately 4.3 billion people, it hosts 60% of the world's current human population. 

B - **A** sia is the world's largest and most populous continent. It covers 8.7% of the Earth's total surface area (or 30% of its land area) and with approximately 4.3 billion people, it hosts 60% of the world's current human population. 


List [In line with text, Tight, Through, In front of text, Behind text]

Identify the correct Wrapping technique applied in segments A and B above.

(vii) What is the output of the following program?

```

Begin
x = 1
y = 1
While (x = y)
    z = x+y
    y = 2
End while
Display z
End.
```

(viii) What operation is indicated by the icon  in graphic application software?

(ix) Gloria writes a paragraph as an answer to an examination question about accessing a website. Use the list given to complete Gloria's answer by inserting the correct four missing terms. Not all terms will be used.

[Browser, cookies, Hypertext Markup Language (HTML), hypertext transfer protocol (http) hypertext transfer protocol secure (https), Internet Protocol address (IP address), web server]

The user enters the URL of the website. TheA..... uses the DNS server to look up the website. The browser sends a request to theB..... of the website. The browser sends a request to theC..... to obtain the website files. The website files are sent asD..... that is interpreted by the browser.

(x) A - Write down one recommendation to avoid Computer Vision Syndrome.

B – Write down one proper electronic waste (e-waste) management method.

[20 marks]

02.

Information systems can be found everywhere in the world. They are most valuable in the automation of human activities. The system development life cycle is one aspect of the process of system development.

(i) Explore one strength and one limitation of the waterfall model as a software development methodology.

(ii) State two instances where system development teams need to get involved in system maintenance.

(iii) State the function of prototyping in the first phase that is used to gather user requirements.

Hazan is an IT consultant working for a medium-sized manufacturing company. The company has experienced significant growth over the years, and as a result, its existing information systems have become fragmented and inefficient. To streamline operations, improve data accuracy, and enhance decision-making, the company's management has decided to implement an Enterprise Resource Planning (ERP) system.

(iv) The team decides to develop the system in small portions allowing the company management to provide regular feedback. What is the most suitable system development life cycle model that the team should use?

(v) The company management conducts a company session to decide whether the newly developed system can be approved or not. What is the test that the company management should perform?

(vi) The company management wanted to terminate the existing system immediately and replace it with the newly developed one. What is the deployment method wanted by the company management?

(vii) The development team suggested introducing the new system initially to the Kandy branch of the company before deploying it to all other branches. What is the deployment method suggested by the development team?

[10 marks]

03.

A factory manufactures plastic pipes. It uses logic circuits to control the manufacturing process.

Consider the logic gate:



(i) Complete the truth table for this logic gate.

Input A	Input B	Output
0	0	
0	1	
1	0	
1	1	

(ii) Consider the truth table:

Input A	Input B	Output
0	0	1
0	1	0
1	0	0
1	1	0

State a single logic gate that produces the given output.

(iii) Plastic pipes of various sizes are manufactured by heating the plastic and using pressure. The manufacturing system uses sensors to measure the pressure (P), temperature (T) and speed (S) of production. The inputs to the manufacturing system are:

Input	Binary value	Condition
P	1	pressure is > 5 bar
	0	pressure is <= 5 bar
T	1	temperature is > 200 degrees Celsius
	0	temperature is <= 200 degrees Celsius
S	1	speed is > 1 meter per second
	0	speed is <= 1 meter per second

The system will sound an alarm (X) when certain conditions are detected.

The alarm will sound when: the temperature is > 200 degrees Celsius and the pressure is ≤ 5 bar

or

the speed is > 1 meter per second and the temperature is ≤ 200 degrees Celsius

Draw a logic circuit to represent the above alarm system. Logic gates used must have a maximum of two inputs.

(iv) Draw a logic circuit for the following Boolean expression.

$$Y = (\text{NOT } A \text{ AND NOT } B) \text{ AND } (\text{NOT } B \text{ OR } C)$$

[10 marks]

04. The given picture shows an unorganized working environment of a computer user. Refer to the picture to answer the given questions.



- (i) List two factors that may badly affect the health of the user.
- (ii) Write two of any recommended correct postures a user should adopt to minimize the adverse effects of ICT.
- (iii) Write two health-related issues that he may face due to his posture.

(iv) Imagine that your friend gave you a copy of computer gaming software which has been bought for his personal use. Do you think it is suitable to install and use the software on your new computer? Explain the reasons for your answer.

(v) Consider the following statements 1- 4 regarding ICT-related security issues.

1 – Display unwanted promotional material in the form of pop-ups on a webpage.

2 – Pretending to be a trustworthy communication, attempting to obtain someone’s username and password for a bank account.

3 – A malware program that replicates itself to spread to other computers.

4 – Unsolicited e-mail received into the inbox of an email software

Identify the matching terms from the list given below for each of the statements 1 – 4. Write down the statement number and the relevant term from the list.

List: [Adware, Spam, Phishing, Bots, Computer worm, Firewall]

(vi) Write down one method to avoid plagiarism when reproducing information from the internet.

[10 marks]

05. A canteen of a school sells 10 different types of food. These food types are placed in a shelf. Students can select foods while walking alongside the shelf and keep them on a tray. These trays are available at the entrance of the canteen. A student, after selecting the food, should proceed to the cashier with the food tray for payment.

You are asked to develop a computer program to calculate the payment due for a food tray. For this purpose, each food type is given a unique integer from 1 to 10.

Food type	1	2	3	4	5	6	7	8	9	10
Unit price (Rs)	10	12	15	10	25	45	50	25	10	12

(i) State all the inputs required for the computer program and its expected output.

(ii) You are requested to write a Pascal program to find and display the maximum value of given 10 integers. The program should read integers one at a time. Propose an algorithm to solve the problem using a flow chart.

(iii) Transform the above flowchart into a pseudo code.

[10 marks]

06. Consider the definition list given below rendered by a web browser.

CPU

Central Processing Unit

ROM

Read Only Memory

(i) Complete the following HTML code segment to display the above list.

<.....>

<.....> CPU <.....>

<.....> Central Processing Unit <.....>

<.....> ROM <.....>

<.....> Read Only Memory <.....>

<.....>

(ii) Write the outputs of the following HTML code segments when rendered by the web browser.

A - <u> Hello World </u>

B - <u> Hello world </u>

(iii) State the operation of the HTML code segment given below. Assume that all HTML documents are in the same folder.

A - Content

(iv) Consider the following statements labelled **P – R** and the two words given against each statement within square brackets. Write down the statement label and the appropriate word corresponding to the blank in each of the statements in the **label → word** format.

P – The quality of a given digital image is determined by the [ppm, dpi] value.

Q – Image files such as JPEG and TIFF that are compressed using[lossy, lossless]

R - [Vector, Raster] images can be created using software such as Adobe Photoshop and GIMP.

[10 marks]

07. Following figure shows the description of the money collected for the Annual Sports meet of the Royal Institute.

	A	B	C	D	E	F
1	Sports Meet Income					
2	Date	Description	No. of Students	Fee per Head	Amount	Contribution to school
3	01/02/2022	Wilkin	LKR 500.00	LKR 100.00	LKR 50,000.00	LKR 5,000.00
4	01/02/2022	Moscrop	LKR 450.00	LKR 125.00	LKR 56,250.00	LKR 5,625.00
5	01/04/2022	Hillard	LKR 400.00	LKR 125.00	LKR 50,000.00	LKR 5,000.00
6	01/06/2022	Passmore	LKR 600.00	LKR 100.00	LKR 60,000.00	LKR 6,000.00
7	Total		1950		LKR 216,250.00	LKR 21,625.00
8	Contribute		10%			
9						

- (i) Write the formula in cell E3 to calculate the total amount collected.
- (ii) Write the steps needed to copy the formula you have written for the other houses.
- (iii) After coping, what would be the formula in cell E5?
- (iv) All houses should contribute a certain percentage from their collection to the school for common expenses. The contribution percentage has been entered in the C8 cell. Write a formula in the F3 cell to find the contribution of Wilkin house. (Your formula should be able to copy cell F4 to F6, to calculate the contribution of the other houses).
- (v) What is the formula that should be in cell G3 to calculate the amount after deducting the contribution?
- (vi) School sports committee decided to increase the contribution percentage to 15%. When it is entered into C8, which cells would be changed?

[10 marks]