



Cambridge O Level

CANDIDATE
NAME

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CENTRE
NUMBER

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CANDIDATE
NUMBER

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COMPUTER SCIENCE

2210/12

Paper 1 Theory

October/November 2020

1 hour 45 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- Calculators must **not** be used in this paper.

INFORMATION

- The total mark for this paper is 75.
- The number of marks for each question or part question is shown in brackets [].
- No marks will be awarded for using brand names of software packages or hardware.

This document has **12** pages. Blank pages are indicated.

1 Tina is creating a website for charity events. She uses HTML to create the website.

(a) State what is meant by HTML.

.....
..... [1]

(b) She uses the hexadecimal colour code #43B7F0 as the background colour for her website.

(i) State whether background colour is an example of **structure** or **presentation**, in the website.

..... [1]

(ii) The hexadecimal colour code #43B7F0 is stored in three **8-bit** registers.

Give the **8-bit binary** values for each part of the hexadecimal code.

43							
B7							
F0							

[6]

(c) Tina uses a microphone to record a welcome message for her website.

(i) State whether the microphone is an **input** or **output** device.

..... [1]

- (ii) She wants to compress the recording to make sure that the file is as small as possible for the website.

Identify which type of compression she should use and describe how this would compress the file for the website.

Type of compression

Description

.....
.....
.....
.....
.....
.....
.....
.....
..... [4]

- (iii) Give **two** benefits of compressing the file for the website.

Benefit 1

.....

Benefit 2

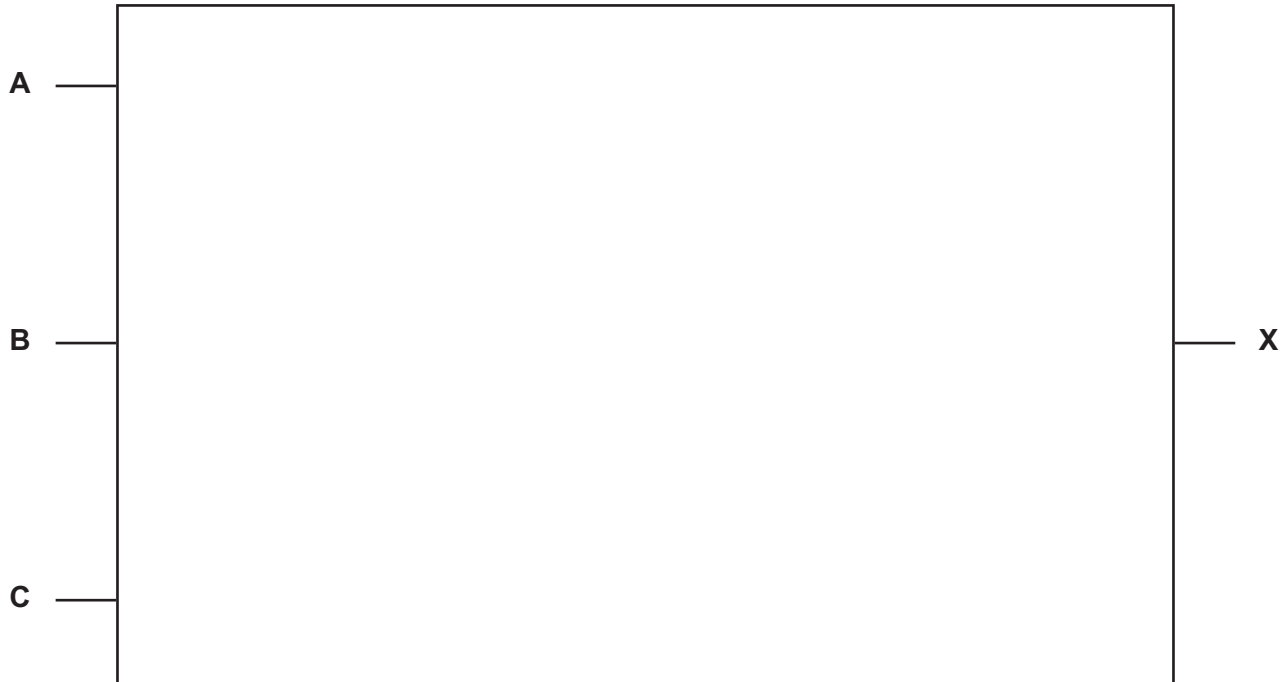
..... [2]

4 Consider the logic statement:

$$X = (((A \text{ NAND } B) \text{ NOR } (B \text{ AND } C)) \text{ OR } C)$$

(a) Draw a logic circuit to match the given logic statement.

All logic gates must have a maximum of **two** inputs. Do **not** attempt to simplify the logic statement.



[4]

(b) Complete the truth table for the given logic statement.

A	B	C	Working space	X
0	0	0		
0	0	1		
0	1	0		
0	1	1		
1	0	0		
1	0	1		
1	1	0		
1	1	1		

[4]

5 Tammy is buying a new computer that has an LED display.

(a) **Five** statements about LED displays are given.

Tick (✓) to show if each statement is **True** or **False**.

Statement	True (✓)	False (✓)
It is a flat panel display		
It creates images using red, green and blue diodes		
It is not very energy efficient and gives off heat		
It can be used in mobile devices such as smartphones and tablets		
It is a front-lit display		

[5]

(b) Tammy connects the computer to her home network. The computer has a MAC address and an IP address.

A paragraph is given about MAC addresses and IP addresses.

Complete the paragraph using the list of terms given. Not all terms need to be used.

- compiled
- computer
- control
- dynamic
- identify
- packet
- principal
- protocol
- similar
- unique

A MAC address is a media access address.

A network device has a MAC address that
 can help the device in the network. An IP address
 is an Internet address. An IP address can be static or

[5]

(c) Tammy uses a browser when accessing the Internet.

Describe the role of the browser.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

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