



Cambridge IGCSE™

CANDIDATE
NAME

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--

INFORMATION AND COMMUNICATION TECHNOLOGY

0417/12

Paper 1 Theory

May/June 2020

2 hours

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen.
- 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.
- You may use an HB pencil for any diagrams, graphs or rough working.

INFORMATION

- The total mark for this paper is 100.
- 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 **16** pages. Blank pages are indicated.



- 1 The 2020 Olympic Games committee is producing a database to show the medal winners in the cycling events.

It is important that the correct data type is used in each of the fields.

- (a) Tick (✓) the most appropriate data type for each of the following fields.

	Boolean (✓)	Numeric (✓)	Text (alphanumeric) (✓)
Athlete_name			
Gold_medal (Y/N)			
Age			
Name_of_country			

[4]

(b) A report has been produced that shows the male gold medal winners from the past three Olympic Games.

Write down **six** of the formatting features that have been used in the report.

Press Release: Mountain Bike competitions

The gold medalists for the 2008 to 2016 games in the Mountain Bike competitions are:

2008 Julien Absalon
Julian is a French rider who won at the Laoshan Mountain Bike course in Beijing, China. In 2012 he abandoned the race but came 8th in 2016.

2012 Jaroslav Kulhavý
Jaroslav is a member of the Czech Republic team who won at Hadleigh Farm, UK.

2016 Nino Schurter
Nino is from Switzerland. He won the Rio Mountain Bike competition in 34.617 mins at the Deodoro cycling base.

- 1.....
.....
- 2.....
.....
- 3.....
.....
- 4.....
.....
- 5.....
.....
- 6.....
.....

[6]

2



(a) Write down the type of interface shown.

..... [1]

(b) Write down **two** disadvantages of using this type of interface.

1.....
.....

2.....
.....

[2]

- 3 Complete the following sentences using the most appropriate network term.

A communication method that wirelessly connects a mobile phone to a car, to allow hands-free use of the mobile phone is

A network device that allows a stand-alone computer, using a dial-up analogue connection, to connect to an ISP is a

A network device that allows a LAN to connect to the internet is a

A wireless communication method used in WLAN is

[4]

- 4 A teacher is creating a spreadsheet that will record the grades students achieved in recent tests and compare the average grades of these tests with the students' forecast grades. The grading the teacher is using awards 1 for the highest grade down to 10 for the lowest. The teacher has created a validation rule on the grade entered.

- (a) Give examples of data used to test the validation rule. Your answers for abnormal test data must be for a different reason in each case.

Type of test data	Example of test data
Normal	
Abnormal	
Abnormal	
Extreme	

[4]

- (b) Part of the spreadsheet is shown, column G subtracts the Forecast grade from the Average grade.

	A	B	C	D	E	F	G
1		Grades obtained in:					
2	Student name	Exam 1	Exam 2	Exam 3	Average grade	Forecast grade	Difference
3	Velia Grimaldi	5	7	8	7	6	1
4	Giuseppe Campo	4	5	3	4	4	0
5	Nicola Donati	2	3	3	3	3	0
6	Giovanni Agnelli	1	3	2	2	5	-3

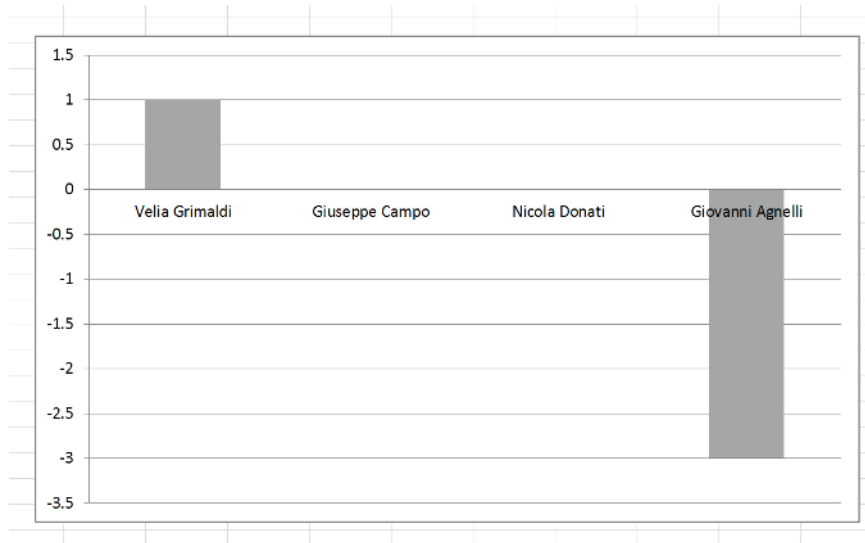
- (i) Describe the steps the teacher can take to edit the spreadsheet to prevent new data being typed into the Forecast grade column.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
..... [5]

- (ii) The teacher has typed a formula in cell E3. The formula is ROUNDUP(AVERAGE(B3:D3),0)
Explain, in detail, what the formula does.

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

(c) The teacher has produced a graph showing the differences between the forecast grade and the average grade for each student. The graph looks like this.



Describe the steps taken to create the graph. Include in your answer **three** improvements that could be made to the graph.

Method.....

.....

.....

.....

.....

.....

.....

Improvement 1.....

.....

Improvement 2.....

.....

Improvement 3.....

.....

[6]

5 When using the internet, FTP can be used.

Explain what is meant by the term FTP.

.....
.....
.....
.....

[2]

6 Smishing and phishing can affect the security of a user's data.

(a) Compare and contrast smishing and phishing.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

[6]

(b) Describe the methods which can be used to help prevent phishing.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

[6]

7 Complete each sentence using the most appropriate output device from the following list.

- | | | | |
|---------------|-------------|--------------------|---------------------|
| 3D printer | Buzzer | Dot matrix printer | Heater |
| Laser printer | LCD monitor | Light | Wide format printer |

(a) The device that can produce prosthetic limbs is called a

.....

[1]

(b) The device that can output soft copy is called a

.....

[1]

(c) The device that can produce sound as its main output is called a

.....

[1]

8 Tablet computers tend to be used more than desktop computers.

Describe the advantages and disadvantages of using a tablet computer rather than a desktop computer.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

[6]

9 People rely heavily on microprocessor-controlled devices in the home.

(a) Describe **two** drawbacks in terms of lifestyle changes this has produced for the users of such devices.

1.....
.....
2.....
.....

[2]

(b) Many of the microprocessor-controlled devices in our homes use WiFi connections.

Describe the benefits and drawbacks of using WiFi connections in this way.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

[6]

10 Music scores can now be produced using computer systems and appropriate software.

Describe the features of this technology.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

[4]

11 A headteacher is planning to produce a presentation to showcase the school's achievements.

(a) Describe **two** methods the headteacher could use to gather information about the requirements of the target audience.

1.....
.....
2.....
.....

[2]

(b) The presentation is to be shown on large monitors at the entrance to the school. The school is planning to embed music into the presentation so that music could be played as the presentation is shown.

Describe the steps the headteacher would need to take to play music in the background of the slides.

.....
.....
.....
.....
.....
.....
.....
.....

[4]

- (c) After showing the presentation to the parents the headteacher wishes to use the presentation to show to young children to encourage them to come to the school.

Describe the features that the headteacher must include to make the presentation meet the needs of an audience of young children.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

[4]

- 12 (a) Describe repetitive strain injury (RSI) and explain what causes it.

.....

.....

.....

.....

[2]

- (b) Give **three** ways of minimising the risk of RSI.

1.....

.....

2.....

.....

3.....

.....

[3]

- 13 Modern laptop computers tend to use external solid state storage rather than external optical storage.

Compare and contrast the use of solid state storage with the use of optical storage to store data.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

[8]

14 There are two types of storage within a computer, internal memory and backing storage.

Discuss the differences between internal memory and backing storage.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

[6]

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.