



Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

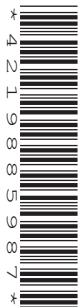
CANDIDATE
NAME

CENTRE
NUMBER

| | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|

CANDIDATE
NUMBER

| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|



INFORMATION AND COMMUNICATION TECHNOLOGY

0417/12

Paper 1 Theory

October/November 2018

2 hours

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces at the top of this page and any additional pages you use.

Write in dark blue or black pen.

Do not use staples, paper clips, glue or correction fluid.

DO NOT WRITE IN ANY BARCODES.

No marks will be awarded for using brand names of software packages or hardware.

Answer **all** questions.

Any businesses described in this paper are entirely fictitious.

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [] at the end of each question or part question.

This syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **13** printed pages and **3** blank pages.

3 Pupils working on a science project use the school network to store and retrieve files. They log onto the network using individual passwords.

(a) Abisha is using his name as his password.

Give **two** reasons why this is not a good idea.

1

2

[2]

(b) Give **two** other pieces of advice the teacher should give regarding the management of passwords.

1

2

[2]

4 A school is setting up a new computerised system to manage many aspects of the school administration.

(a) Describe how this system can be used to manage student registration and attendance.

.....
.....
.....
.....
.....
.....
..... [3]

(b) Describe the benefits of using this system.

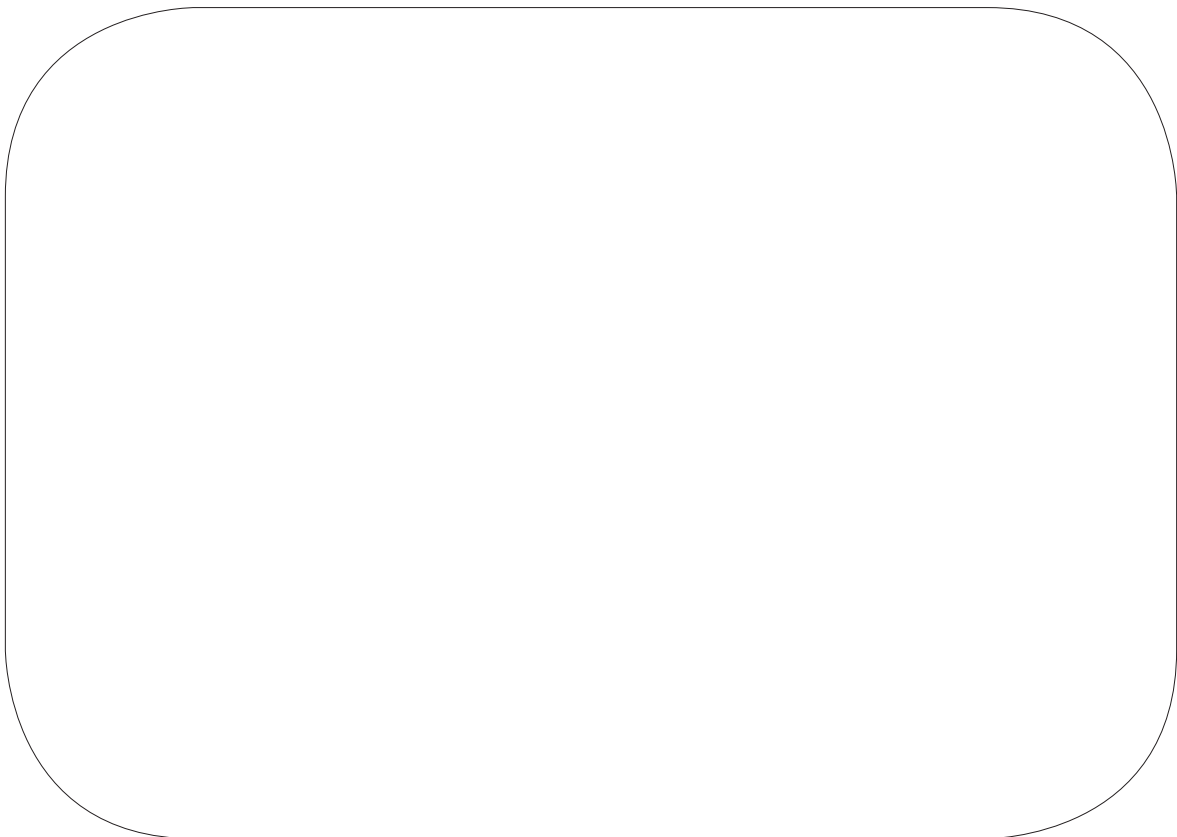
.....
.....
.....
..... [2]

- (c) The data from the registration system is saved in the school administration database.

The head teacher will need to check the attendance records for any student for any semester. She will type in the Student_ID and the Semester (Autumn, Spring or Summer). After she has done this the following data will appear on the same screen.

| Field name |
|----------------------|
| Student_name |
| Days_present |
| Number_of_lates |
| Number_absences |
| Parents_phone_number |
| Tutor_group |

Design a suitable screen layout to display one record. It must have appropriate spacing for each field, navigation aids and a space to type in search data. Do not include examples of students.



[6]

A student record from the database is shown below.

| Field name | Example Data |
|----------------------|--------------|
| Student_ID | 8543 |
| Semester | Spring |
| Student_name | Kannur Rahul |
| Days_present | 180 |
| Number_of_lates | 4 |
| Number_absences | 6 |
| Parents_phone_number | 01244878387 |
| Tutor_group | 11ABC |

(d) Name an appropriate validation check that could be used for each of the following fields, based on the data shown in the record.

| Field name | Validation check |
|----------------------|------------------|
| Semester | |
| Number_of_lates | |
| Parents_phone_number | |

[3]

5 Describe the benefits and drawbacks of using a Graphical User Interface (GUI) rather than a Command Line Interface (CLI).

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

- 7 A student is setting up a database of information about volcanoes for a Geography project. The following is part of the database.

| Name_of_volcano | Country | Height | State | Last_eruption | Volcano_type |
|-----------------|----------|--------|---------|---------------|------------------|
| Usu | Japan | 731 | Active | 2001 | Stratovolcano |
| Tor Zawar | Pakistan | 2237 | Dormant | 2010 | Fissure |
| Datong | China | 1882 | Extinct | 450 | Cinder Cone |
| Changbaishan | China | 2744 | Active | 1903 | Stratovolcano |
| Stromboli | Italy | 926 | Active | 2016 | Stratovolcano |
| Tengchong | China | 2865 | Dormant | 1609 | Pyroclastic cone |
| Wudalianchi | China | 597 | Dormant | 1721 | Multi-coned |

Operators such as AND, OR, NOT, LIKE, >, >=, <, <=, =, <> can be used to search the volcano database. The search criteria for all the dormant volcanoes with a height of less than 1000 metres would look like this:

State = "Dormant" AND Height < 1000

Use only the given operators and data to:

- (a) write down the search criteria that will produce a list of all the volcanoes that are not extinct in China that also last erupted before the year 1900.

.....
 [6]

- (b) write down the names of the volcanoes that match the requirements of **part (a)**.

.....
 [2]

- (c) The data is sorted into ascending order of height.

Write down the name of the volcano which would now be in the first record.

.....
 [1]

8 Spam emails are a problem for computer systems.

(a) Explain what is meant by a spam email.

.....
.....
.....
..... [2]

(b) Explain why spam emails need to be prevented.

.....
.....
.....
..... [2]

(c) Describe the methods which can be used to prevent spam emails.

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

9 Describe how a router forwards data packets from one network to another.

.....
.....
.....
.....
.....
..... [3]

Proofreading is sometimes thought to be verification.

(d) Explain the difference between verification and proofreading.

.....
.....
.....
..... [2]

11 .PDF and .RTF are two file formats used for storing documents.

Describe the file formats and explain the differences between them.

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

12 HotHouse Design is a large design company. It has recently created a new web address for their design portfolios. The web address is:

https://www.hothouse-design.co.uk/portfolios

(a) Describe the following parts of the web address.

https://
.....
hothouse-design
.....
.uk
.....
/portfolios
.....

[4]

(b) Hyperlinks are widely used in web pages.

Explain what is meant by a hyperlink.

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

[2]

13 Spreadsheets use functions, formulae and named ranges.

(a) Describe the term:

Function
.....
.....
.....

Formula
.....
.....
.....

[4]

(b) Explain why a named range is used in a spreadsheet.

.....

.....

.....

..... [2]

14 Emails are a very popular way of communicating.

Tick **four** statements, relating to emails that are true.

| | Tick (✓) |
|---|-------------|
| Emails can only be sent from a computer. | |
| An email can be used to send a message to many people at the same time. | |
| It always takes a long time for an email to arrive. | |
| All emails must have an attachment. | |
| Attachments may have to be compressed to be sent via email. | |
| Emails can be used to send legal documents. | |
| Every email has to be printed out. | |
| In order to send an email back to the sender without retyping the address, reply is used. | |
| Email means extended mail. | |
| Email attachments are always checked for viruses before they are sent. | |

[4]

BLANK PAGE

BLANK PAGE

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 International Examinations Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cie.org.uk after the live examination series.

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