

Oxford Cambridge and RSA Examinations

General Certificate of Secondary Education

Information and Communications Technology
PAPER 2 (Unit 1)
HIGHER TIER

1453 (3453)

Specimen Paper

Additional materials:
Answer paper

TIME 1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Answer **all** questions.

INFORMATION FOR CANDIDATES

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

Total marks for this paper is 80.

- 1 A spreadsheet is used to process data about the number of cars using two car parks over a year.

	A	B	C	D
1	Month	Car park A	Car Park B	Most popular car park
2				
3	January	120	145	if (B3>C3 , "A" , "B")
4	February	140	135	
5	March	174	201	
6	April	134	120	
7	May	167	130	
8	June	278	290	
9	July	290	315	
10	August	312	289	
11	September	216	290	
12	October	213	278	
13	November	126	178	
14	December	78	98	

- (a) Cell D3 shows how the most popular car park for January is calculated. After typing the formula in D3, describe a quick way of putting similar formula into D4 to D14.

[2]

(b) Describe how a chart or graph is created to show the use of the car parks over a period of one year.

[2]

(c) (i) Give **one** different situation which can be modelled using a computer.

[1]

(ii) Give **two** reasons why a computer model would be useful in this case.

Reason 1 _____

Reason 2 _____

[2]

2 Describe **two** precautions which must be taken to ensure that a computer room is safe for pupils to use.

Precaution 1 _____

Precaution 2 _____

[2]

3 (a) Give **one** situation where automatic data logging equipment could be used to record data over a long period of time.

[1]

(b) Give one reason why automatic data logging equipment should be used to record data over a long period of time?

[1]

4 Computers can be used in science laboratories to collect data from experiments.

(a) Give **one** example of an experiment in which data logging is used.

[1]

(b) Describe how Information Technology is used create a report on the experiment.

[2]

5 (a) What is a computer virus?

[2]

(b) Write down **two** ways in which you could prevent a computer virus affecting your machine.

Way 1 _____

Way 2 _____

[2]

6 A school is going to buy a number of laptop computers for pupils to borrow and use at home.

Give **two** problems that this may cause.

Problem 1 _____

Problem 2 _____

[2]

7 A small buggy connected to a computer is placed in a maze. The buggy will travel through the maze and learn the correct path. State **one** sensor which should be attached to the buggy and describe how it would detect an obstacle.

Sensor _____

Detection _____

[2]

8 A school secretary uses a computer all day. What **two** pieces of advice would you give to prevent the secretary having medical problems through the use of the computer? Give a reason for each piece of advice.

Advice _____

Reason _____

Advice _____

Reason _____

[4]

9 A school needs to convert a classroom into an Information Technology room containing 20 computers.

(a) What factors should be taken into account when choosing a suitable classroom?

[2]

(b) Cost will be one factor in choosing the type of computers to buy. What other factors should be considered?

[2]

- (c) Explain how the introduction of the new computer system will affect the staff and pupils.

[2]

- 10 (a) Give **two** advantages of using an encyclopædia stored on CD-ROM rather than as a book.

Reason 1 _____

Reason 2 _____

[2]

- (b) Give **two** reasons why it is preferable to use the book.

Reason 1 _____

Reason 2 _____

[2]

11 Many computers include a CD-ROM drive as well as a floppy disc and a fixed hard drive. Tick the boxes which best describe the situations in the following table.

	floppy disc	hard disc	CD-ROM
cannot be written to			
is the cheapest			
retrieves data the fastest			
is not portable			

[4]

12 A school is introducing a computerised system for attendance registers. Describe the main stages gone through before the system is operational.

[4]

13 Describe some of the safety issues which must be considered when setting up a new computer room in a school.

[3]

14 Using an example explain how a computer aided learning system can help pupils learn.

Example _____

Explanation _____

[4]

15 A school is buying a new computer for the staffroom. Discuss the arguments for and against this decision.

[3]

16 A water company uses a sensor to detect the acidity of the water in its reservoirs. Describe what happens to the data from the sensors.

[3]

17 A house has a microprocessor controlled central heating system. Describe how the system operates.

[3]

18 A floor robot is placed at the entrance to a maze. It travels through the maze, eventually reaching the exit having made many wrong turns. The second time through the maze it travels directly to the exit without making a mistake.

Describe the features of the robot which enable it to do this.

[4]

19 You are producing a school magazine using a desktop-publishing package. Compare alternative methods used to obtain pictures for inclusion in the magazine.

[6]

20 Describe how the misuse of computers might give rise to legal and moral problems.

[4]

