

Candidate Name	Centre Number	Candidate Number
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GCSE

178/04*252/02

INFORMATION AND COMMUNICATION TECHNOLOGY / INFORMATION AND COMMUNICATION TECHNOLOGY (PILOT)

PAPER 2

Higher Tier

A.M. FRIDAY, 5 June 2009

1½ hours

Examiner's Use Only		
Question	Maximum Mark	Mark Awarded
1	8	
2	6	
3	5	
4	8	
5	9	
6	5	
7	4	
8	13	
9	6	
10	8	
11	9	
12	8	
13	11	
Total Mark	100	

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. Where the space is not sufficient for your answer, continue the answer at the back of the book, taking care to number the continuation correctly.

INFORMATION FOR CANDIDATES

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

Answer **all** questions.

1. (a) Tick (✓) the correct column to show whether each of the following statements about RAM and ROM are True or False. [4]

Statement	True	False
RAM is used to store programs and data temporarily		
ROM retains its memory when the power is switched off		
A computer's performance is improved if it has more ROM than RAM		
ROM is volatile		

- (b) State what is meant by the following terms. [2]

(i) **BIT**

(ii) **BYTE**

- (c) Write down the **largest** and **smallest** amount of memory from the list below. [2]

1 Megabyte

1 Gigabyte

1 Kilobyte

(i) **Largest**

(ii) **Smallest**



2. Computer systems are often used to control a manufacturing process.

- (a) Give **TWO** advantages of such process control systems. [2]

(i)

(ii)

- (b) Give **TWO** disadvantages of such process control systems. [2]

(i)

(ii)

(c) Glass manufacturing is one example of an industry that uses computer process control.

Name **TWO** other examples of industries that use computer process control. [2]

(i)

(ii)

6

3. Hard disks are one type of storage device.

(a) Name **THREE** other different types of storage devices. [3]

(i)

(ii)

(iii)

(b) Explain using an example the term 'disk cache'. [2]

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5

4. The Data Protection Act (DPA) contains eight basic principles.

(a) List **FOUR** of these principles. [4]

(i)

(ii)

(iii)

(iv)

(b) State **TWO** actions an individual can take, if they find data held about them is incorrect. [2]

(i)

(ii)

(c) State **TWO** exemptions from the DPA. [2]

(i)

(ii)

8

5. A user interface allows humans to communicate with computers. One such type of interface is a Graphical User Interface (GUI).

(a) Two features of a GUI are *windows* and *pointers*. List **FOUR** other features of a GUI. [4]

(i)

(ii)

(iii)

(iv)

(b) State **ONE** disadvantage of a GUI. [1]

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.....

(c) Name **TWO** *other* types of user interface and give a different advantage for each type. [4]

(i)

Advantage

.....

(ii)

Advantage

.....



6. All computers have an operating system.

(a) Explain what is meant by an operating system. [1]

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(b) List **FOUR** different functions of an operating system. [4]

(i)

(ii)

(iii)

(iv)



7. (a) Name an application that uses **real-time transaction processing** and give a reason why this type of processing is required. [2]

Application

Reason

.....

- (b) Explain what is meant by the following terms: [2]

(i) multi-tasking

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(ii) multi-programming

.....



8. Payroll is an application which uses *batch processing*.

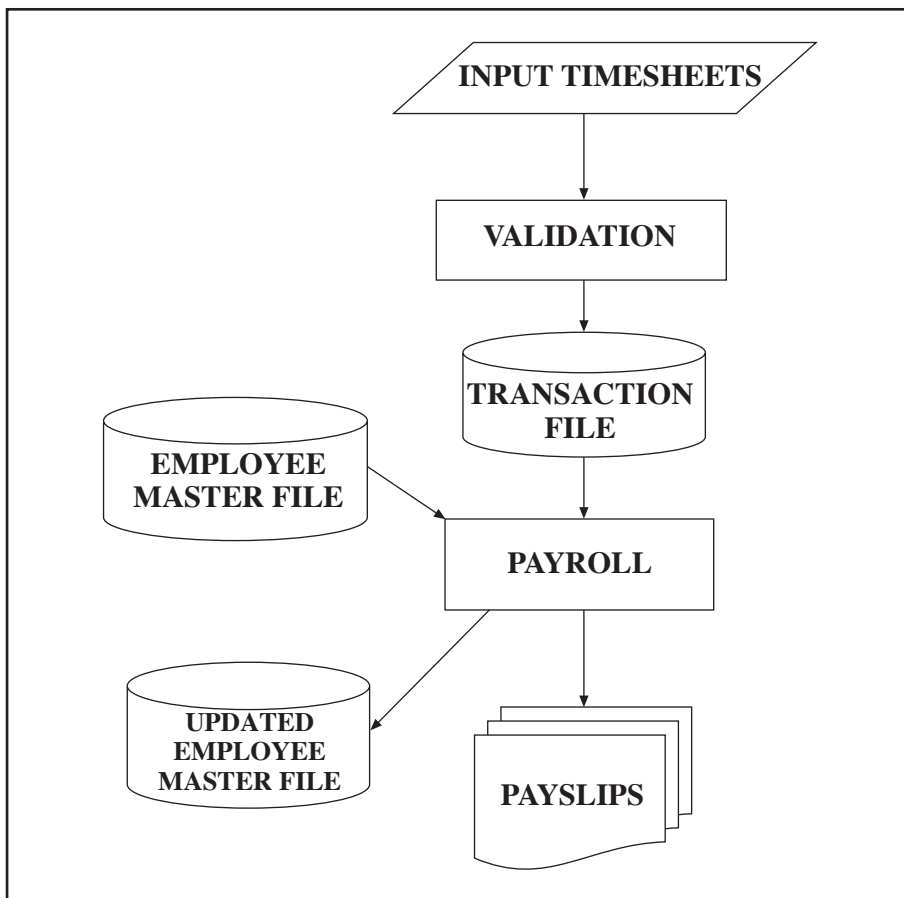
(a) Explain what is meant by *batch processing*?

[1]

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(b) The diagram below shows the monthly payroll process.



(i) List **TWO** items of data found on the payroll *Transaction File*.

[2]

Item 1

Item 2

(ii) Other than name and contact details, list **FOUR** items of data held in the payroll *Master File*.

[4]

(I)

(II)

(III)

(IV)

(c) At the end of the monthly payroll process, list **TWO** items of data that will have been updated in the payroll *Master File*. [2]

(i)

(ii)

(d) Explain using an example, the purpose of *Validation* in the payroll process. [2]

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(e) The data held on the payroll *Master files* is very important. Suggest what backup procedures should be used to ensure no loss of data. [2]

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13

9. Data used in weather forecasting is collected using a range of methods.

(a) Weather ships are one method of collecting this data. Name **TWO** other methods of collecting weather data. [2]

(i)

(ii)

(b) Name **TWO** sensors used to collect weather data. [2]

(i)

(ii)

(c) Large, powerful computers are used to analyse the data. State which type of computer would be most suitable for this purpose giving a reason for your answer. [2]

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6

10. In designing a new ICT system a systems analyst has to consider the following, gathering data, designing the new system, changeover methods and documenting the system. Describe what is involved in each of the following [8].

(a) Gathering data

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(b) Designing the new system

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(c) Changeover methods

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(d) Documenting the system

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11. Computer systems are said to be networked when they are linked together.

(a) List **THREE** advantages of networks over standalone computers. [3]

(i)

(ii)

(iii)

(b) (i) Draw a diagram of a **RING** Network. Include in your answer a fileserver, workstation and a printer. [4]

(ii) Name **TWO** *other* different computer network topologies. [2]

(I)

(II)



12. A school has a computerised library system.

(a) *Other than a mouse and keyboard*, name **TWO** different devices which could be used to input data. [2]

(i)

(ii)

(b) Other than name and address, state the key field and **TWO** *other* fields you would expect to find in the borrowers file. [3]

(i)

(ii)

(iii)

(c) Describe the stages involved in borrowing a book using the computerised library system. [3]

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13. 'Crime and socially related offences are on the increase because of the misuse of computer systems.'

Discuss the above statement. Identify **THREE** such crimes or offences and outline the different consequences on individuals, organisations or society and describe in detail how they can be prevented or minimised. [11]

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