

**ADVANCED SUBSIDIARY GCE
 INFORMATION AND COMMUNICATION TECHNOLOGY**

2512

Information, Systems and Communications

MONDAY 14 JANUARY 2008

Afternoon
 Time: 1 hour 30 minutes

Candidates answer on the question paper

Additional materials: No additional materials are required



Candidate Forename

Candidate Surname

Centre Number

Candidate Number

INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- Do **not** write outside the box bordering each page.
- Write your answer to each question in the space provided.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is **90**, of which 4 marks are allocated to the assessment of the quality of written communication where an answer requires a piece of extended writing.
- No marks will be awarded for using brand names of software packages or hardware.

FOR EXAMINER'S USE

1		17
2		4
3		3
4		4
5		10
6		10
7		12
8		3
9		4
10		4
11		4
12		11
QWC		4
TOTAL		90

This document consists of **15** printed pages and **1** blank page.

Betters Photographic Company (BPC) specialises in taking and printing photographs. It has a head office and five shops in nearby towns.

1 BPC is looking to improve its business. One source of information is asking existing customers.

(a) Identify **three** other different sources where BPC could get information from, to improve its business.

Source 1

.....

Source 2

.....

Source 3

..... [3]

(b) The information collected is coded before being entered into a computer.

Describe **two** disadvantages of coding the data.

Disadvantage 1

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.....

.....

Disadvantage 2

.....

.....

..... [4]

(c) The data is validated when entered into the computer.

Identify and describe **three** different validation methods.

Method 1

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.....

Method 2

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.....

.....

Method 3

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.....

..... [6]

(d) The quality of the data collected by BPC can affect the information produced.

The age of the data source is one factor that can affect the quality of the information produced.

Identify **four** other factors.

Factor 1

.....

Factor 2

.....

Factor 3

.....

Factor 4

..... [4]

2 The computing facilities within the shops include general purpose computers. A general purpose computer contains random access memory (RAM).

(a) Identify **two** tasks that RAM can be used for.

Task 1

.....

Task 2

..... [2]

(b) (i) Identify a device that could be used to input a paper photograph to a computer system.

.....

..... [1]

(ii) Identify a device that could be used to edit a photograph that is stored on a computer system.

.....

..... [1]

3 The data at each shop needs to be backed up every week and stored off-site.

(a) Identify a suitable storage medium that could be used to store the 120GB of data that is backed up every week.

.....

..... [1]

(b) The system used for backing up and restoring data needs to be tested on a regular basis.

Explain why it is important that testing takes place.

.....

.....

.....

..... [2]

- 4 BPC has recently taken over a competitor. The competitor uses hardware and software in its shops which is incompatible with the hardware and software used by BPC.

Describe how the lack of standardisation could affect BPC.

.....

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..... [4]

5 A new computer system is being installed into the head office of BPC. The operating system could be a batch processing system or an interactive system.

(a) Describe **two** differences between a batch processing system and an interactive system.

Difference 1

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.....

.....

Difference 2

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.....

..... [4]

(b) The operating system will contain linkers and loaders.

Describe the purpose of linkers and loaders.

Linkers

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.....

.....

Loaders

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.....

..... [4]

(c) The new system will have a command line interface (CLI).

Identify **two** characteristics of a CLI.

Characteristic 1

.....

Characteristic 2

..... [2]

6 BPC is having a new database to store and process customer orders.

The database will be a relational database.

(a) Describe the following terms associated with relational databases.

(i) Field
.....
.....
..... [2]

(ii) Duplicate Data
.....
.....
..... [2]

(b) The data could be stored using variable or fixed length records.

Give **two** advantages to BPC of using fixed length records.

Advantage 1
.....
Advantage 2
..... [2]

(c) The database uses sequential, indexed sequential and random access to the data.

(i) For each type of access, give an example to show how it would be used in the new database.

Sequential

.....

Indexed Sequential

.....

Random

..... [3]

(ii) Identify **one** difference between serial and sequential access to data.

.....

.....

.....

..... [1]

7 BPC is setting up a network in the head office to connect its computers together and has appointed a network manager to run the new network.

(a) A ring network topology could be used.

Draw and label a ring network topology.

[2]

(b) Describe **three** advantages, to the network manager, of networking the computers together.

Advantage 1

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

Advantage 2

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.....
.....

Advantage 3

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.....
..... [6]

(c) Describe **two** items of hardware needed to connect the local area network (LAN) to the internet.

Item 1

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.....

.....

Item 2

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.....

..... [4]

8 Passwords have been introduced on the new network.

Identify **three** rules that users must follow when choosing their password.

Rule 1

.....

Rule 2

.....

Rule 3

..... [3]

9 BPC can communicate with its shops through the use of video conferencing.

Describe **two** facilities of video conferencing that would be useful to BPC when communicating with its shops.

Facility 1

.....

.....

.....

Facility 2

.....

.....

..... [4]

- 10 The network manager is concerned about her health as she is working with computers for long periods of time.

Describe the health risks she might be concerned about because she works with computers.

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

- 11 BPC is aware of the Electronic Communications Act (2000) (ECA) but is unsure of how it affects them.

Identify **two** aspects of the ECA and for each, state how it could affect BPC.

Aspect 1
.....
Affect
.....
Aspect 2
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Affect
..... [4]

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..... [11]
Quality of Written Communication [4]
[Total: 90]

15
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