



Rewarding Learning

ADVANCED
General Certificate of Education
January 2010

Information and Communication Technology

Assessment Unit A2 1

assessing

Module 4: Development of Information Systems

[A2W11]



FRIDAY 22 JANUARY, MORNING

TIME

1 hour 30 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number on the Answer Booklet provided.
Answer **all seven** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 90, including a maximum of 4 marks for quality of written communication.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

Answer **all seven** questions.

1 During the development of an information system, a feasibility study is carried out.

(a) Describe **three** factors which should be considered during a feasibility study. [6]

A number of different fact finding methods can be used.

(b) Name and describe **three** different fact finding methods. [6]

(c) Explain the purpose of fact finding. [4]

2 An information system provides users with a Graphical User Interface (GUI).

(a) Describe the main features of a GUI. [4]

(b) Name and describe **two** other types of user interface. [8]

3 Data can be transmitted using coaxial cable or fibre optic cable.

(a) Coaxial cable is susceptible to interference.

(i) Explain how coaxial cable is affected by interference. [3]

(ii) Explain how coaxial cable is designed to minimise interference. [2]

(b) Describe the main features of fibre optic cable. [4]

4 A supermarket chain uses a distributed database.

(a) Explain where data about stock will be stored **in this case**. [2]

(b) Describe **two** drawbacks to the supermarket of a distributed database. [4]

(c) Name and describe one other type of database the supermarket chain could use. [3]

- 5 TCP/IP is a protocol used on a WAN.
- (a) Explain the purpose of
 - (i) TCP
 - (ii) IP [6]
 - (b) Name and describe a protocol used on a LAN. [5]

- 6 Prototyping is used during system development.
- (a) Name and describe **two** different types of prototyping. [8]
 - (b) List **three** benefits of prototyping. [3]
 - (c) Describe **two** drawbacks of prototyping. [4]

7 A school divides its pupils up into year groups. There is one teacher in charge of each group. The groups compete against each other in a number of events.

The school's database includes the entities PUPIL, TEACHER, YEARGROUP and EVENT.

- (a) Explain what is meant by each of the following:
 - (i) Primary key
 - (ii) Composite key
 - (iii) Foreign key [6]

The database has been normalised.

- (b) Draw a fully labelled entity relationship diagram (ERD) for the school's database as described above. The diagram should not include any many-to-many relationships. [8]

