![CCEA logo]

Rewarding Learning

ADVANCED
General Certificate of Education
2011

Applied Information and Communication Technology

Assessment Unit A2 7

assessing

Unit 7: Investigating Systems

[A6J11]

FRIDAY 27 MAY, MORNING

MARK SCHEME

1

	PROBLEM	EFFECT ON THE BUSINESS	POSSIBLE SOLUTION
1	Customers find it difficult to renew their contracts as Fiona has other commitments and is not always available.	If customers experience a delay when renewing contracts, they may decide to take their business elsewhere. Poor customer image. Inefficiency.	Not necessary for Fiona to deal with renewals as these should be straightforward. She should allocate this responsibility to another member of staff. Fiona could be asked to schedule one half day each week to be on the premises.
2	Caroline is sometimes not able to visit a new client for up to two weeks.	A delay in establishing client requirements will mean that the contract will not start for the period of the delay and this causes a loss in income for SQUEAKY CLEAN.	Employ another manager to work alongside Caroline. Keep an on-line diary.
3	Harry has too much paperwork to deal with.	Due to the amount of paperwork, Harry may make mistakes which could lead to customers being charged incorrectly; asked for a payment that has already been made or not receiving a service that has been asked for. All of these situations will lead to dissatisfied customers and so a possible reduction in income for the business. Slow response to customers. Financial implications.	Develop a computerised system to handle all record keeping and data processing requirements. Employ another member of staff.

[5]   5

2

OBJECTIVE	SUITABLE
Reduce costs for clients.	
Calculate staff wages.	✓
Maintain an inventory of stock and equipment.	✓
Provide training for staff.	
Deliver excellent cleaning service for clients.	
Record client contract details.	✓
Facilitate easy renewal of client contracts.	✓
Produce invoices and record payments received.	✓

[5]   5

3 Explain the role of the analyst in relation to the system lifecycle. You should refer to specific activities that the analyst would undertake and other key members of the team who they will work with.

Mark band 1–2
Candidate provides a basic answer showing limited understanding of the role of the analyst within the system lifecycle.
   Limited knowledge and understanding displayed.
   Limited reference to phases of lifecycle.
   Basic activities identified.
   Basic written communication.

Mark band 3–4
Candidate provides a competent answer indicating understanding of the role of the analyst at most stages of the lifecycle.
   Some knowledge and understanding displayed.
   Clear understanding of role of analyst in relation to working with other stakeholders.
   Responsibilities at different stages of the lifecycle clearly understood.
   Good range of activities mentioned.
   Appropriate level of written communication.

Mark band 5–6
Candidate provides a very competent answer showing thorough understanding of the role of the analyst.
    Very good knowledge and understanding displayed.
    Role of analyst discussed fully.
    All phases of the lifecycle referred to.
    Demonstrates thorough understanding of activities carried out by the analyst with specific reference being made to documentation.
    Reference made to communication with other members of team.
    Excellent level of written communication.
                                                                                          6

4

FEATURE	DSDM
Encourages user involvement throughout duration of project.	✓
Highly structured.	
Suitable for large organisations.	
Makes use of prototyping.	✓
Insists on highly defined documentation at each stage of the project.	
Generally delivers project on time and within budget.	✓
Prioritises user requirements.	✓

                                                                          [4]   4

5

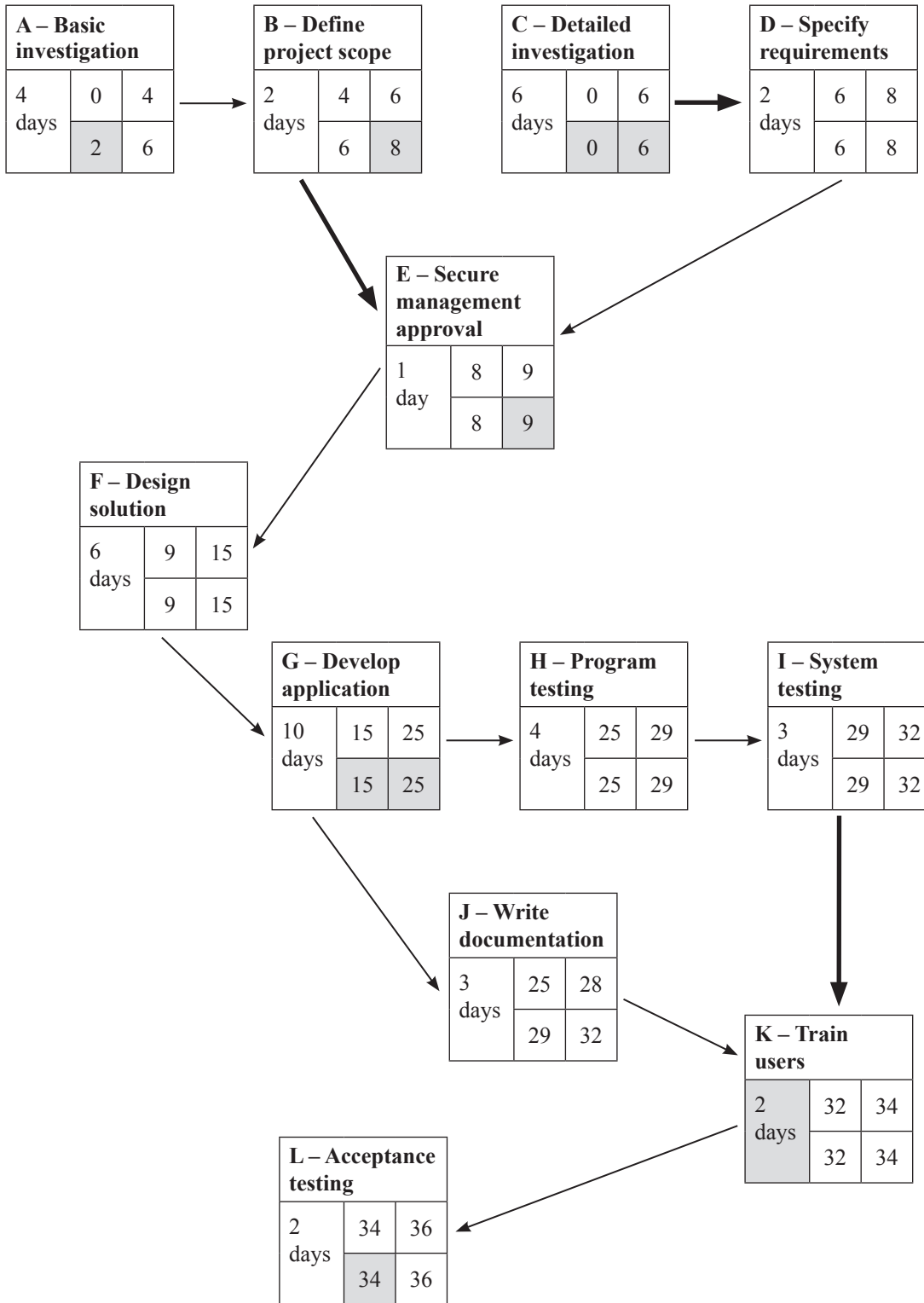| EMPLOYEE	REASON FOR INVOLVEMENT	FACT FINDING TECHNIQUE(S)
Fiona Duffy	Has responsibility for all legal documentation within the business, so will draw up the contract with ABSOLUTE ANSWERS.	Interview
Caroline Smyth	Manager of the business and so has the most detailed understanding of what happens on a daily basis. Will also be able to suggest possible improvements.	Interview Observation
Driver	Only one person involved in this part of the business so will have specific requirements that others may not be aware of.	Interview
Cleaners	Need to find out exactly what paperwork is used by the people who provide services for clients. Important for the analyst to see the sort of problems experienced during a typical working day.	Observation
Customers	Necessary to obtain customer feedback concerning performance and possible improvements.	Questionnaire
Terry Hamilton	Timescale and budget must be defined.	Interview
Harry	Provide copies of all documentation and explain problems with current process. Enable a first-hand view of the business activities to be obtained.	Interview Observation Reading around the system

[11]   11

6 The following schedule has been drawn up for the project.

ACTIVITY	DESCRIPTION	PREDECESSOR	DURATION (DAYS)
A	Basic investigation	–	4
B	Define project scope	A	2
C	Detailed investigation	–	6
D	Specify requirements	C	2
E	Secure management approval	B, D	1
F	Design solution	E	6
G	Develop application	F	10
H	Program testing	G	4
I	System testing	H	3
J	Write documentation	G	3
K	Train Users	I, J	2
L	Acceptance testing	K	2

(a)

A – Basic investigation

4 days	0	4
	2	6

B – Define project scope

2 days	4	6
	6	8

C – Detailed investigation

6 days	0	6
	0	6

D – Specify requirements

2 days	6	8
	6	8

E – Secure management approval

1 day	8	9
	8	9

F – Design solution

6 days	9	15
	9	15

G – Develop application

10 days	15	25
	15	25

H – Program testing

4 days	25	29
	25	29

I – System testing

3 days	29	32
	29	32

J – Write documentation

3 days	25	28
	29	32

K – Train users

2 days	32	34
	32	34

L – Acceptance testing

2 days	34	36
	34	36

[12] 12

(b) Critical path: C, D, E, F, G, H, I, K, L [1] 1

(c) Mark band 1–2

Candidate provides a basic answer showing limited understanding of project management techniques.

Limited knowledge and understanding displayed.

Additional employee identified.

Impact of additional resource considered.

Basic written communication.

Mark band 3–4

Candidate provides a competent answer indicating understanding of project management techniques.

Some knowledge and understanding displayed.

Additional employee identified who can help with development or testing i.e. programmer/tester.

Basic reference to critical path and importance of adding extra resources to these activities.

Limited reference to slack.

Appropriate level of written communication.

Mark band 5–6

Candidate provides a very competent answer showing thorough understanding of project management techniques.

Very good knowledge and understanding displayed.

Role of slack discussed fully.

Importance of adding resources to activities on critical path discussed fully.

Programmer/developer suggested as additional employee and sound justification provided.

Excellent level of written communication.   6

7

STATEMENT	TRUE/FALSE
Level 1 diagrams provide less detail than the context diagram.	FALSE
Level 1 diagrams can only contain the entities that existed in the context diagram.	TRUE
Files do not need to be included on a level 1 diagram.	FALSE
Several level 1 diagrams can be completed for each context diagram.	FALSE
The level 1 diagram should be used for discussion with the technicians.	FALSE
The files that appear on your level 1 diagram should also exist on your entity relationship model.	TRUE

[6]   6

8

FIELD NAME	PURPOSE	CALCULATED or STORED
Invoice Date	To show the date an invoice was generated.	STORED
Invoice No	To uniquely identify an invoice.	STORED
Client No	To link the invoice to the client who needs to make a payment.	STORED
Reminder dates	To flag up when reminders should be sent out.	CALCULATED
Amount due	Total amount due for jobs completed within the last month for a particular client.	CALCULATED
Total invoices sent	A control total at the end of the report – should count all invoices produced.	CALCULATED
Total invoice value	Total value for all invoices – based on sum of all jobs for the last 30 days.	CALCULATED

[10]   10

9 (a)

FIELD NAME	DATA TYPE/ SIZE	REQUIRED?	COMMENTS	SAMPLE DATA
Payment Ref	Text, 6	Yes	Primary key	PR0098
Client No	Text, 4	Yes	Foreign Key – links to CLIENT table	C002
Payment Date	Date/ Time	Yes	Default to today's date	15/06/2011
Payment Amount	Currency	Yes	Must be greater than 0	£200

[8]   8

(b) (i) Reminder Ref/Reminder ID/Reminder Code
Reminder Date
Type of Reminder
Invoice Number
(1 mark for any three fields from above list or other suitable
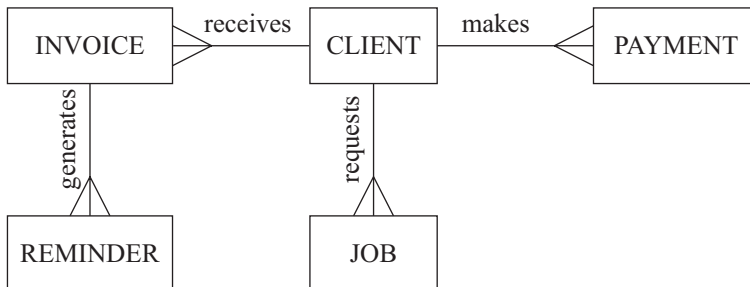alternatives) [3]   3

(ii) Reminder Ref/ID/Code [1]   1

(or other suitable alternative)

(c)

[2]   2

(only 1 mark if no 1: many relationships)

10 (a) (i) Program testing
Carried out as system is developed.
Carried out by programmer.
Must ensure that all calculations work correctly.
Looks at individual parts of the system and ensure they work
independently. [2]   2

(ii) System Testing
Carried out by analyst.
Ensures that all parts of the system integrate correctly.
Looks at the system in its entirety.
Check all documentation and procedures [2]   2

(iii) Acceptance Testing
Carried out by the user of the system.
Ensures that the final application meets user requirements.
Check all documentation and procedures are correct from a user
perspective. [2]   2

(b) Mark band 1–2
Candidate provides a basic answer showing limited understanding of
testing.
   Limited knowledge and understanding displayed.
   Basic knowledge of individuals responsible for types of testing.
   Limited reference to sequencing of testing.
   Limited problems identified.
   Basic written communication.

Mark band 3–4
Candidate provides a competent answer indicating understanding of
testing.
   Some knowledge and understanding displayed.
   Reference made to incorrect sequencing of tests.
   Some understanding regarding the correct person to carry out each
   type of test.
   Basic attempt at suggesting improvements e.g. all program testing
   carried out first.
   Appropriate level of written communication.

Mark band 5–6
Candidate provides a very competent answer showing thorough
understanding of testing.
   Very good knowledge and understanding displayed.
   Range of problems identified.
   Improvement suggested.
   Correct people allocated to types of testing.
   Sequencing of testing identified as a major problem.
   Excellent level of written communication.   6

11 (a) (i) Phased [1]

    (ii) Suitable justification provided for phased – based on answers
        provided other methods are acceptable. [1]

(b) Mark band 1–2
Candidate provides a basic answer showing limited understanding of
changeover techniques.
    Three further techniques identified – PILOT, DIRECT,
    PARALLEL
    Limited description of each technique provided.
    Basic advantages and disadvantages suggested.
    Very little reference to circumstances within SQUEAKY CLEAN.
    Basic written communication.

Mark band 3–4
Candidate provides a competent answer indicating understanding of
changeover techniques.
    Three further techniques identified and discussed well.
    Good description of each technique provided.
    Good range of advantages and disadvantages covered.
    Circumstances considered.
    Appropriate level of written communication.

Mark band 5–6
Candidate provides a very competent answer showing thorough
understanding of changeover techniques.
    Very good knowledge and understanding displayed.
    Three further techniques identified and discussed fully.
    Advantages and disadvantages fully discussed.
    Comprehensive reference to answers from SQUEAKY CLEAN
    and also reference to other circumstances which might occur – e.g
    critical processing.
    Excellent level of written communication. 6

	Total	**100**