



Rewarding Learning

ADVANCED
General Certificate of Education
2012

**Applied Information and
Communication Technology**

Assessment Unit A2 7

assessing

Unit 7: Investigating systems

[A6J11]

FRIDAY 25 MAY, MORNING

**MARK
SCHEME**

1 (a) Reasons for User involvement

- The Users of the system are fully aware of all aspects of the existing system.
- The Users of the system are fully aware of all problems with the existing system.
- The Users of the system will be able to comment on what they might like to see in a new system.
- Without User involvement, the analysis process could be flawed. Important factors could be omitted and any proposed new system could be deficient.
- Users are likely to be co-operative if they are included in the analysis phase. They will feel part of the process.
- Users will recognise that their opinion is valued.
- Any other acceptable reason.

[1] for each of three reasons [3]

(b) Reasons for **not** involving users

- Users might not provide accurate information about existing procedures. This could lead to incorrect assumptions by the analyst.
- Not all Users are in a position to supply useful information.
- Some Users might be the cause of some of the problems.
- User expectation might be too high given the resources allocated.
- Users may focus on their own priorities rather than priorities of the business.

[1] for one reason [1]

4

2 (a)

STATEMENT	FACT FINDING TECHNIQUE
Employees can be anonymous.	Questionnaires
Analyst can obtain detailed information from the people who know most about the system.	Interviewing
Questions may be misinterpreted and there is no way of seeking clarification.	Questionnaires
Will be able to see how well the system operates and how the employees react to situations.	Observation
Requires greater interpersonal skill on behalf of the analyst.	Interviewing
Records may not be properly maintained and so the information gathered could be inaccurate.	Document Inspection
Useful to see the procedures at first hand.	Observation
Can interact with employees at all levels in the company.	Interviewing

[1] for each reason

[8]

(b) Techniques used in SQUEAKY CLEAN

Mark Band ([0]–[2])

Candidate provides a basic answer showing limited understanding of fact finding techniques.

Limited knowledge and understanding displayed.

Limited reference to specific examples from the case study that would illustrate why a particular technique should be applied.

Basic written communication.

Mark Band ([3]–[4])

Candidate provides a developed answer indicating understanding of fact finding techniques.

Some knowledge and understanding displayed.

Reference to specific examples from the case study that would illustrate why a particular technique should be applied, for example:

Interviewing likely to be the most useful means of getting information from Fiona, Terry, Caroline and Harry.

Observation useful for seeing the office practices in operation and how Harry manages the range of activities he is required to carry out.

Appropriate level of written communication

Mark Band ([5]–[6])

Candidate provides a well developed answer indicating good understanding of fact finding techniques.

Good knowledge and understanding displayed.

A good range of specific examples from the case study that illustrate why a particular technique should be applied. These will extend over the range of techniques discussed.

Candidates may indicate the unsuitability of some techniques in this particular situation.

Very effective level of written communication.

[6]

14

Aspect of organisation to be investigated	Reason
Organisation structure and staffing	<ul style="list-style-type: none"> • James must understand how the organisation is managed. • James must understand who is responsible for the various aspects of the system. • James must understand how information is passed around the system and who makes decisions. • Any other valid response
Inputs	<ul style="list-style-type: none"> • The sources of information must be identified as they are likely to be the same in any new system. • Every piece of data required by the system must be clearly identified as part of the investigation. • The format that it is in and what it includes must be known to evaluate what is necessary for a new system. • James will need to understand the volume of input and if it is likely to increase. • It is essential for James to understand where information is coming from. • To understand how it is currently input to the system. • Validation required for the new system. • Any other valid response
Outputs	<ul style="list-style-type: none"> • The destinations of information must be identified as they are also likely to be the same in any new system. • Every piece of data created by the system must be clearly identified to see if it is necessary, accurate and efficiently produced. • It is essential for James to understand where information is going to and how it is currently output from the system. • Any other valid response
Files	<ul style="list-style-type: none"> • James must understand what files are held within the current system and why they are necessary. • James will need to know the contents of the files. • James will want to understand how the files are maintained as this may help him. • He may be able to propose a more efficient way of storing information. • Any other valid response
Processes	<ul style="list-style-type: none"> • James must understand what exactly happens to the inputs as they pass through the system. • He must understand how input is used to update files and create output. • Any other valid response
Problems	<ul style="list-style-type: none"> • Unless the existing problems are well understood, it would be impossible to design an appropriate solution. • The current success of the business will not be maintained unless the problems are identified and resolved. • Any new system will be less likely to replicate existing bad practices. • Any other valid response

[1] for each valid response × 6

6

Problem	Impact on business
Caroline and Harry use standalone PCs.	<ul style="list-style-type: none"> • They have to share resources such as the printer. This could cause delays in processing information. • They have no way of sharing the data easily. Caroline and Harry should both be able to exchange/modify/update data that they both require. The data could be shared and stored once only if they had a networked system. • No internet access limits their resources significantly.
Stock items are sometimes not available for staff.	<ul style="list-style-type: none"> • Stock will not be available for staff to do their work. • Staff may have to supply the items themselves in order to complete the tasks. This is unsatisfactory. • Clients will not be pleased at having to supply materials. • If materials are not available from the client then work might not be completed at all. • As there is a time delay in reordering the stock, items may be unavailable on more than one occasion. • Clients are not getting the service stated on their contracts. • Any other valid response
Harry is at least two weeks behind in creating invoices.	<ul style="list-style-type: none"> • Payments will not be made and clients will still be provided with services. • Some clients may not pay at all. • There is a danger that some invoices may not be produced at all because there is such a backlog. • The company will lose money. • It will create a bad company image. • Any other valid response
Some client payments are not recorded.	<ul style="list-style-type: none"> • Service may be suspended to clients because of apparent non-payment. • If payments are not recorded, clients will receive a series of reminders causing annoyance and possible loss of customers. • The accounting system will be incorrect causing problems with balancing the books. • Any other valid response

[1] for each of two responses × 4

[8]

8

5 (a)

CHARACTERISTIC	METHODOLOGY
Very suited to business applications.	DSDM
Development occurs within very tight timescales.	DSDM
Produces documentation at each stage of the development.	SSADM
Uses data flow modelling.	SSADM
Large systems may be broken down into smaller tasks so that different tasks can be developed at the same time.	DSDM
No task can commence before the preceding one is completed.	SSADM
Not possible to see the product until very late in the development cycle.	SSADM
Users involved throughout the life cycle.	DSDM

[1] for each correct characteristic/methodology

[8]

Other valid characteristics associated with the methodology type are acceptable.

(b) Mark Band ([0]–[2])

Candidate provides a basic answer showing limited understanding of prototyping.

Limited knowledge and understanding displayed.

Limited reference to characteristics and how they would be applied at SQUEAKY CLEAN.

Basic written communication.

Mark Band ([3]–[4])

Candidate provides a developed answer indicating understanding prototyping.

Some knowledge and understanding displayed.

Reference to specific characteristics that would illustrate why prototyping should be used, for example:

- Generation of a working model early in the development
- Can be used for testing
- Can help users understand the new system
- Can assist training.

Appropriate level of written communication

Mark Band ([5]–[6])

Candidate provides a well developed answer indicating good understanding of prototyping.

Good knowledge and understanding displayed.

A good range of characteristics that illustrate why prototyping should be applied should be included in the discussion.

Candidates should outline the personnel involved in the process.

Very effective level of written communication.

[6]

14

6 (a) (i) Context Process

manage administration at squeaky clean
--

Title = 1 plus rectangle = 1

[2]

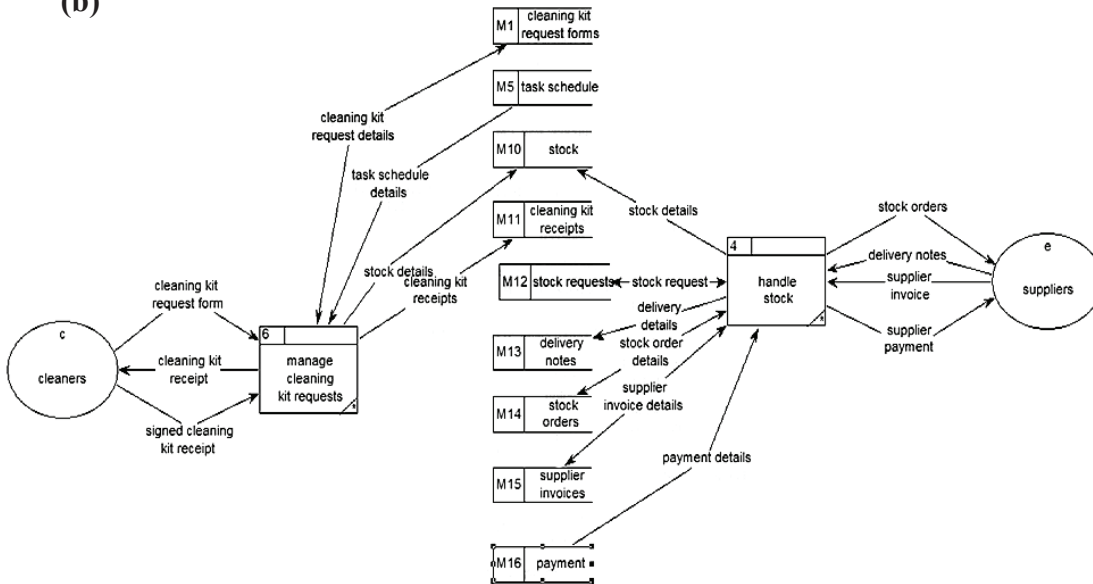
(ii)

Entity 1	client	
Entity 2	cleaners	
Entity 3	van drivers	

[2] for each correct item (name = 1 + letter = 1)

[6]

(b)



- (i) cleaners
- (ii) cleaning kit request forms
- (iii) manage cleaning kit requests
- (iv) cleaning kit request forms
- (v) delivery notes
- (vi) payment
- (vii) payment details
- (viii) supplier invoice

[1] for each correct answer

[8]

16

7 (a) GANTT CHART FEATURES

- Visual representation of activities on a bar type chart
- Can show precedence of activities and concurrent activities
- Shows start and end times of activities
- Useful when dealing with smaller projects
- Can be difficult to show all activities on a larger project

GANTT CHART EXAMPLES

- Any suitable named Gantt chart activity Caroline is involved in.

(b) NETWORK DIAGRAM

- Shows the path of project
- Start and finish times are identified
- Critical path calculated

NETWORK DIAGRAM EXAMPLES

- Any suitable named network diagram activity Caroline is involved in.

One feature plus one example = [2] × 2 [4]

(c) (i) Predecessor column purpose is [2]
 • To lay out the activities that come before other activities.

(ii) **Gantt chart** – it represents a simple problem and Caroline would understand the concept better. [1]

(iii) Critical path = 31 hours [1]

8

8 (a) Fiona Phase of testing is **acceptance phase**.
 Reason is that she's bought the product and will want it to work for her
 Programmer phase of testing is **module testing** (unit or programme)
 Reason is that this is part of his job.
 [1] for phase of testing × 2 + [1] for reason × 2 [4]

(b) In answering this question, candidates should demonstrate an understanding of the importance of testing throughout the development process. They should show awareness of the personnel likely to be engaged with the various types of testing.

Mark Band ([0]–[2])

Candidate provides a basic answer showing limited understanding of testing.

Limited knowledge and understanding displayed.

Limited reference to the two teams and what each could offer to the process.

Basic written communication.

Mark Band ([3]–[4])

Candidate provides a developed answer indicating understanding of testing.

Some knowledge and understanding displayed.

Reference to specific members of the two teams and the roles they would play.

Types of testing identified, program, system and acceptance noted. Personnel attached to testing type.

Appropriate level of written communication

Mark Band ([5]–[6])

Candidate provides a well developed answer indicating good understanding of testing.

Good knowledge and understanding displayed.

Detailed evaluation of each group and the role each member might assume.
 Reference to the fact that the client and cleaners in team 2 are unlikely to have any role to play in the process.

Very effective level of written communication. [6]

10

9 (a)

Field	CLIENT	CONTRACT	CONTRACT OPTION	NONE
Contract Number		✓	✓	
Client Name	✓			
Client Address	✓			
Option			✓	
Start Date		✓		
End Date				✓
Rate			✓	
Number of weeks			✓	

[1] for each correct row [8]

- (b)
- The end date can be determined by using the CONTRACT and CONTRACT OPTION tables.
 - Add the number of weeks to the start date. [1]

9

10 (a) A storyboard

- is a visual means of providing a step by step plan of how the web site will look.
 - will show design characteristics as well as content to be included.
 - is a visual specification of the product to be developed.
- Any one description [1]

(b) Candidates should select members of staff from the group of people most closely involved with the system in the company.

- Caroline/Harry/Fiona/Terry would all have significant contributions to make to the design of the website.
- Some might also indicate that clients could provide assistance in this design.

[1] for relevant staff member × 2
 [1] for reason × 2 [4]

- (c) Candidates should discuss whether or not storyboarding is the best design tool in this case. Candidates should make suggestions as to how the web site should be developed and the people who will be involved. For example, they may indicate the possibility of prototyping.

Mark Band ([0]–[2])

Candidate provides a basic answer showing limited understanding of the necessity to have a design process.

Limited knowledge and understanding displayed.

Limited reference to the characteristics of storyboards and how they could be used in the design of the web site.

Limited reference to how the process should be conducted.

Basic written communication.

Mark Band ([3]–[4])

Candidate provides a developed answer showing understanding of storyboarding and the necessity for a design process.

Some knowledge and understanding displayed.

Reference to specific features of storyboards and how they could be used in the design of the website.

Specific reference to how the process should be conducted.

Appropriate level of written communication

Mark Band ([5]–[6])

Candidate provides a well developed answer indicating good understanding of storyboarding and web site design.

Good knowledge and understanding displayed.

Characteristics of storyboards and their application in this situation is fully discussed.

Candidates should fully explain how the design process should be conducted.

Very effective level of written communication.

Total

11

100