



*Rewarding Learning*

**ADVANCED**  
**General Certificate of Education**  
**January 2013**

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**Applied Information and  
Communication Technology**

**Assessment Unit A2 7**

*assessing*

**Unit 7: Investigating Systems**

**[A6J11]**

**THURSDAY 17 JANUARY, MORNING**

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**MARK  
SCHEME**

	<b>Problem 1</b>	<b>Problem 2</b>
	<b>Angel dress is missing.</b>	<b>Wedding dress delivered to the wrong house.</b>
<b>Why did this happen?</b>	<ul style="list-style-type: none"> <li>• There is no record of stock and searching through rails is the only option.</li> <li>• No-one checks on the return of stock.</li> </ul>	<ul style="list-style-type: none"> <li>• The customer addresses are stored in many different places.</li> <li>• The address of the customer may have been updated only in one place.</li> <li>• Doreen gave the delivery man the old address by mistake.</li> <li>• There may be two customers with the same name for that wedding dress.</li> <li>• No customer numbers used.</li> </ul>
<b>What is the effect on the business?</b>	<ul style="list-style-type: none"> <li>• It is time-consuming.</li> <li>• Fiona will have lost the time and money which she invested in making the costume.</li> <li>• Customer will be disappointed in the service and will go elsewhere and may not return.</li> <li>• Items may go missing.</li> <li>• Reputation affected.</li> </ul>	<ul style="list-style-type: none"> <li>• The delivery man wastes a lot of time travelling around the houses.</li> <li>• Time and money are lost.</li> <li>• It may have a knock on effect on other deliveries he has to make.</li> <li>• The delivery may be late or might not even happen.</li> <li>• Since this is a wedding dress, the reputation of Fiona's Fashions would be damaged.</li> </ul>
<b>What is a possible solution?</b>	<ul style="list-style-type: none"> <li>• Implement a stock management system.</li> <li>• Include reports on which items have not been returned and should be followed up.</li> <li>• Spreadsheet, Database accepted.</li> </ul>	<ul style="list-style-type: none"> <li>• Store detailed information about each customer.</li> <li>• Allocate customer numbers.</li> <li>• Customer information should be separated from orders.</li> </ul>

[1] for one reasonable suggestion in each section = [1] × 6 = [6]

6

- 2 The feasibility assessment will compare the two proposals considering factors including technical feasibility, operational feasibility and economic feasibility (terminology not required).

**Mark Band ([1]–[2])**

Candidate provides a basic answer showing limited knowledge and understanding of factors used in assessment of project feasibility.

- Limited reference to information provided in the question in their assessment.
- Provides poor descriptions of the feasibility of the proposals with little or no comparison or contrast between the two proposals.
- Basic level of written communication.

**Mark Band ([3]–[4])**

Candidate provides a competent answer showing knowledge and understanding of factors used in assessment of project feasibility.

- Uses some relevant information provided in the question in their assessment.
- Provides descriptions of the feasibility of both proposals with some comparison/contrast.
- Competent level of written communication.

**Mark Band ([5]–[6])**

Candidate provides a very competent answer showing knowledge and understanding of factors used in assessment of project feasibility.

- Uses relevant information provided in the question in their assessment.
- Competently compares and contrasts the two proposals.
- Excellent level of written communication.

[6]

6

3

Information Required	Fact Finding Technique	Reason for Choosing Technique
How Fiona thinks the business will develop in the future.	Interview.	<ul style="list-style-type: none"> <li>• She is the owner and has a strategic view of the business.</li> <li>• Because we are only asking one person and she may not have this information written down.</li> </ul>
How Doreen and Fiona deal with customer enquiries relating to the fancy dress hire.	Observation.	<ul style="list-style-type: none"> <li>• One can see that rails are searched, for example, and problems often occur – such as not finding items.</li> <li>• This would not be revealed in another method.</li> </ul>
Customers' opinions of the different services at Fiona's Fashions.	Questionnaires.	<ul style="list-style-type: none"> <li>• Would need to ask a large number of customers and the questionnaire is the best way of doing this.</li> </ul>
The information recorded about wedding, fancy dress, alterations and household orders.	Document Analysis or alternative name.	<ul style="list-style-type: none"> <li>• All these are provided in the books that Fiona's husband set up.</li> </ul>

[1] for each fact finding technique and [1] for each acceptable reason = [1] × 8 [8]

8

## 4 (a) (i) Feasibility Study

(ii) Business Study

(iii) Functional Model Iteration

(iv) Design and Build Iteration

(v) Implementation

[1] for each correct stage of the methodology =  $[1] \times 5$  [5]

- (b) Methodology characteristics discussed can include: documentation, stages in the lifecycle, user involvement, techniques used (DFD and prototypes), when used, control of process, testing, delivering, time to complete, difficulty level, step by step or iterative, top-down approach, traditional/RAD, advantages and disadvantages.

**Mark Band ([1]–[2])**

Candidate provides a basic answer showing limited knowledge and understanding of the two software development methodologies.

- Correctly identifies only a few characteristics.
- May only describe characteristics of one methodology.
- Provides poor descriptions of the characteristics with little or no comparison or contrast.
- Basic level of written communication.

**Mark Band ([3]–[4])**

Candidate provides a competent answer showing knowledge and understanding of the two software development methodologies.

- Correctly identifies most characteristics.
- Describes characteristics in both methodologies.
- Provides descriptions of the characteristics with some comparison/contrast.
- Competent level of written communication.

**Mark Band ([5]–[6])**

Candidate provides a very competent answer showing knowledge and understanding of the two software development methodologies.

- Correctly identifies many characteristics.
- Describes characteristics of both methodologies.
- Compares and contrasts many characteristics.
- Excellent level of written communication. [6] 11

5

Task	People			
	Fiona	Analyst	Programmer	Technician
Approve Project Proposal	✓			
Design Algorithms			✓	
Create DFD		✓		
Create Overall Test Plan		✓		
Develop the Training Guide		✓		
Perform System Backups				✓

[6]

6

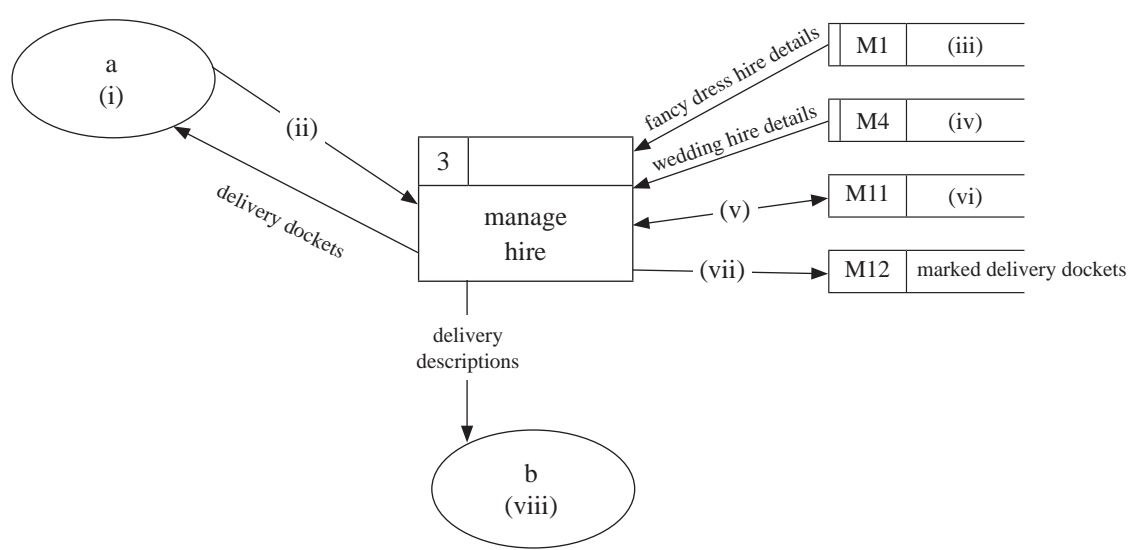
6

Information	Categories			
	Input	Output	File	Process
Customer Enquiry	✓			
Manage Accounts				✓
Itemised Bill		✓		
Signed Timesheets	✓			
Alterations Notebook			✓	
Stack of marked off delivery dockets			✓	
Cost Orders				✓
Reminders		✓		

[8]

8

7 (a)



- (i) customers/client
  - (ii) signed delivery docket details
  - (iii) fancy dress/hire
  - (iv) weddings/hire
  - (v) signed docket details
  - (vi) signed/completed delivery docket details
  - (vii) marked docket details
  - (viii) delivery man/David Magee/van driver [8]
- (b) (i) A data flow [1]
- (ii) It is a duplicate (repeated) on the level 1 diagram. Used to help readability. [1]
- (iii) No, it is just an identifier and does not refer to a sequence. "No" is acceptable without a reason. [1]
- (iv) They uniquely identify the external entities – customers and delivery man. [1]
- (v) It would be indicated with a D symbol. [1]

- 8 (a)
- Redundancy of information
  - Replication of information
  - Repeating data
  - Customer information is stored many times in many places
  - Updates to the information inconsistent
  - Able to link to more information
  - Minimise data loss/errors
  - Retrieval of data/information improved
  - Centralised data

[1] for each two reasons above =  $[1] \times 2$  [2]



(data model A) ✓ [1]

(c)

Field Name	Data Type	Comments/Validation	Sample
HireAgreementNo	Text	<b>Primary Key (of HIRE AGREEMENT table)</b>	HA1099
CostumeStockID	<b>Text</b>	Foreign Key to COSTUME STOCK Table	CSTK0056
CustomerID	Text	<b>Foreign Key to CUSTOMER Table</b>	CUST1111
DateHired	Date	The date the hire agreement was signed.	24/10/2012
NoDaysHired	<b>Numeric</b>	Must always be whole number.	7
ReturnedDate	<b>Date or Date/Time</b>	Must be > DateHired	30/10/2012
AgreedCost	Currency	After applying any promotional discounts to the standard cost.	£20.00
OverDueCostPerDay	<b>Currency</b>	Must be to whole pounds, no decimal places.	£5
Deposit Paid	Currency	Amount of Deposit.	£30
Deposit Returned	<b>Yes/No Boolean acceptable</b>	Was deposit returned?	Yes

[7]

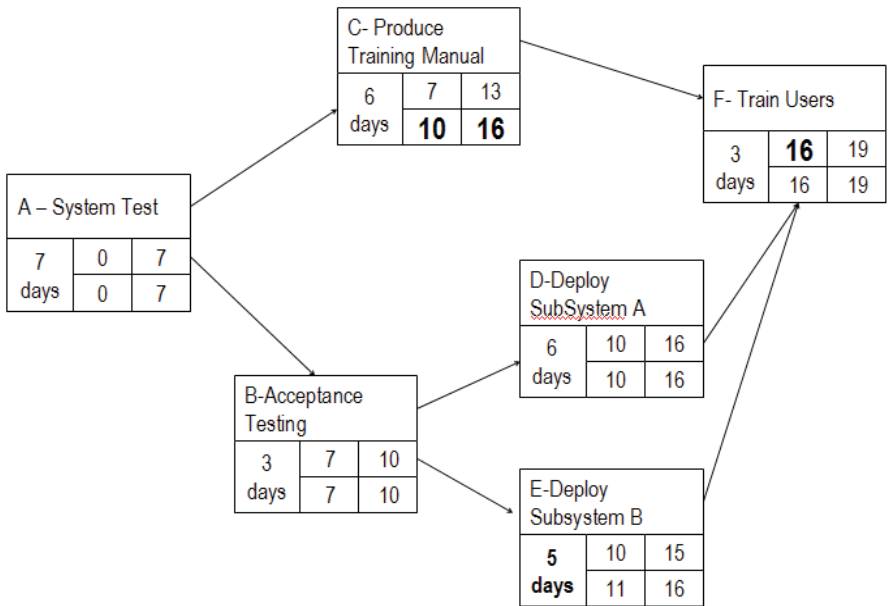
- (d) A query that listed the costumes that were due but had not been returned by comparing DateHired, NoDaysHired, and ReturnedDate.

- No Days Hired added to Date Hired
- Comparing to Today's Date
- Returned Date not entered

[1] for one answer above =  $[1] \times 3$  [3]

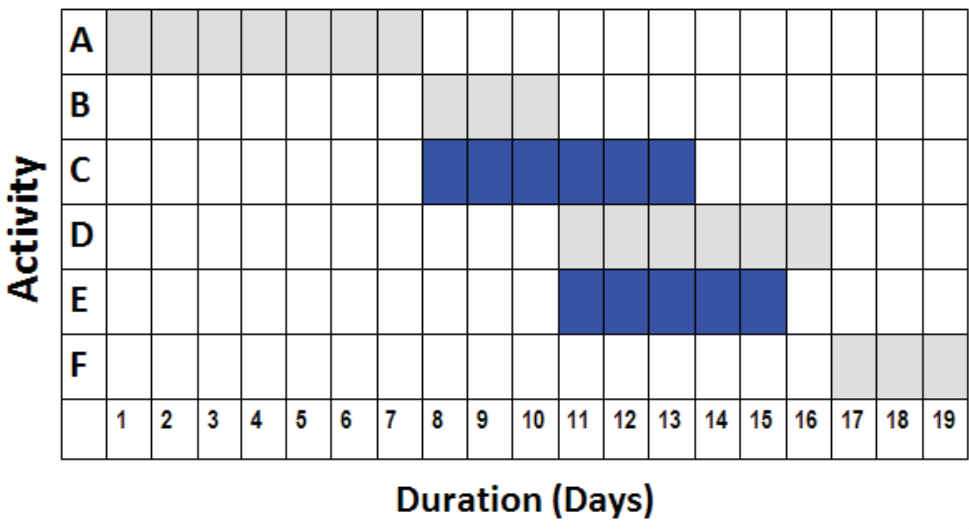


9 (a)



“days” must be present [4]

(b)



[2]

(c) Characteristics of network diagrams and GANTT charts discussed can include: simplicity/complexity, format of presentation (tasks/activities, duration, uncertainty, dependencies), information provided, determination of project parameters (duration, critical path, slack, float), updating plans, size of project.

**Mark Band ([1]–[2])**

Candidate provides a basic answer showing limited knowledge and understanding of project planning tools.

- Correctly identifies only a few characteristics.
- Provides poor descriptions of the characteristics with little discussion.
- Little or no examples of management information these tools provide.
- Basic level of written communication.

**Mark Band ([3]–[4])**

Candidate provides a competent answer showing knowledge and understanding of the two project planning tools.

- Correctly identifies most characteristics.
- Provides descriptions of the characteristics of each tool with some discussion.
- Examples of management information these tools provide.
- Competent level of written communication.

**Mark Band ([5]–[6])**

Candidate provides a very competent answer showing knowledge and understanding of the two project planning tools.

- Correctly identifies many characteristics.
- Discusses many characteristics of each tool.
- Excellent examples of management information these tools provide.
- Excellent level of written communication.

[6] 12

10 (a) Program/Unit testing [1]

(b) Examples may include clean data and handling of errors such as:

- putting in correct data and expecting correct results
- putting in a CustomerNo that does not exist thus expecting an error
- extreme/abnormal data

[4]

(c) Acceptance testing [1]

(d) Requirements Specification or similar name such as User Requirements Document [1]

(e) If the database structure is incorrect then this may impact on:

- documentation – data dictionary, ER models
- implementation – databases, interface, module code
- test plans
- schedule of the project
- project evaluation by management
- expensive/may delay the project

Any **two** consequences plus description = [2] × 2 [4]

11

**11** Maintenance may be necessary because of: errors in the software user guides, failure of hardware, unmet customer requirements, poor performance in the real business setting, security issues, extra features requested, new hardware or operating systems, new legislation. Student may use terminology such as adaptive, perfective, corrective and preventative but this is not necessary.

**Mark Band ([1]–[2])**

Candidate provides a basic answer showing limited knowledge and understanding of maintenance.

- Correctly identifies only a few reasons for maintenance.
- Provides poor descriptions of the issues involved.
- Provides few (if any) examples.
- Basic level of written communication.

**Mark Band ([3]–[4])**

Candidate provides a competent answer showing knowledge and understanding of maintenance.

- Correctly identifies most reasons for maintenance.
- Provides reasonable descriptions of the issues involved.
- Provides some examples.
- Competent level of written communication.

**Mark Band ([5]–[6])**

Candidate provides a very competent answer showing knowledge and understanding of maintenance.

- Correctly identifies many reasons for maintenance.
- Provides detailed descriptions of the issues involved.
- Uses examples extensively.
- Excellent level of written communication.

[6]

6

**Total**

**100**