



Rewarding Learning

ADVANCED  
General Certificate of Education  
2013

Centre Number

71	
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Candidate Number

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## Applied Information and Communication Technology

Assessment Unit A2 7

*assessing*

Unit 7: Investigating Systems

[A6J11]

THURSDAY 23 MAY, MORNING

ML

### TIME

2 hours, plus your additional time allowance.

### INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Answer **all eleven** questions.

### INFORMATION FOR CANDIDATES

The total mark for this paper is 100.

Quality of written communication will be assessed in **questions 2, 4, 6 and 10**.

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

This paper is accompanied by a Case Study. You must **not** use your own annotated copy of this Case Study.

### ADVICE TO CANDIDATES

You are advised to take account of the marks for each part question in allocating the available examination time.

For Examiner's use only			
Question	Marks available	Marks	Remark
1	5		
2	14		
3	5		
4	6		
5	13		
6	6		
7	12		
8	15		
9	13		
10	6		
11	5		
<b>Total</b>	<b>100</b>		

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- 1 In the table below, tick (✓) **five** good reasons for developing a new system at FIONA'S FASHIONS.

<b>REASON FOR DEVELOPING A NEW SYSTEM</b>	
Fiona has to look through the stock every time there is an enquiry for a fancy dress costume.	
Doreen gets annoyed when Fiona changes the entries in the notebooks.	
Taking measurements at a customer's house is time-consuming.	
A lot of time is being spent with customers who have genuine grievances.	
The wedding and costume hire side of the business would benefit from a web presence.	
Information is duplicated in the notebooks.	
Employees do not like filling in timesheets.	
Customers often have to wait longer than initially estimated when a required item, like a zip, is not in stock.	

[5]

<b>Examiner Only</b>	
<b>Marks</b>	<b>Remark</b>

2 Fred McCurry, the analyst for FLEXIBLE FUTURES, wants to conduct some background research into the current situation at FIONA'S FASHIONS. In order to do this he will use some fact finding techniques.

(a) Complete the table below identifying one characteristic of each technique. Write about the suitability of each technique in this situation.

FACT FINDING TECHNIQUE	CHARACTERISTIC	SUITABILITY
Interviewing		
Questionnaires		
Observation		
Document Inspection		

[8]

Examiner Only	
Marks	Remark



- 3 Fred needs to consider the systems development lifecycle and the issues involved. Complete the following table writing down which statements are **true** and which are **false**.

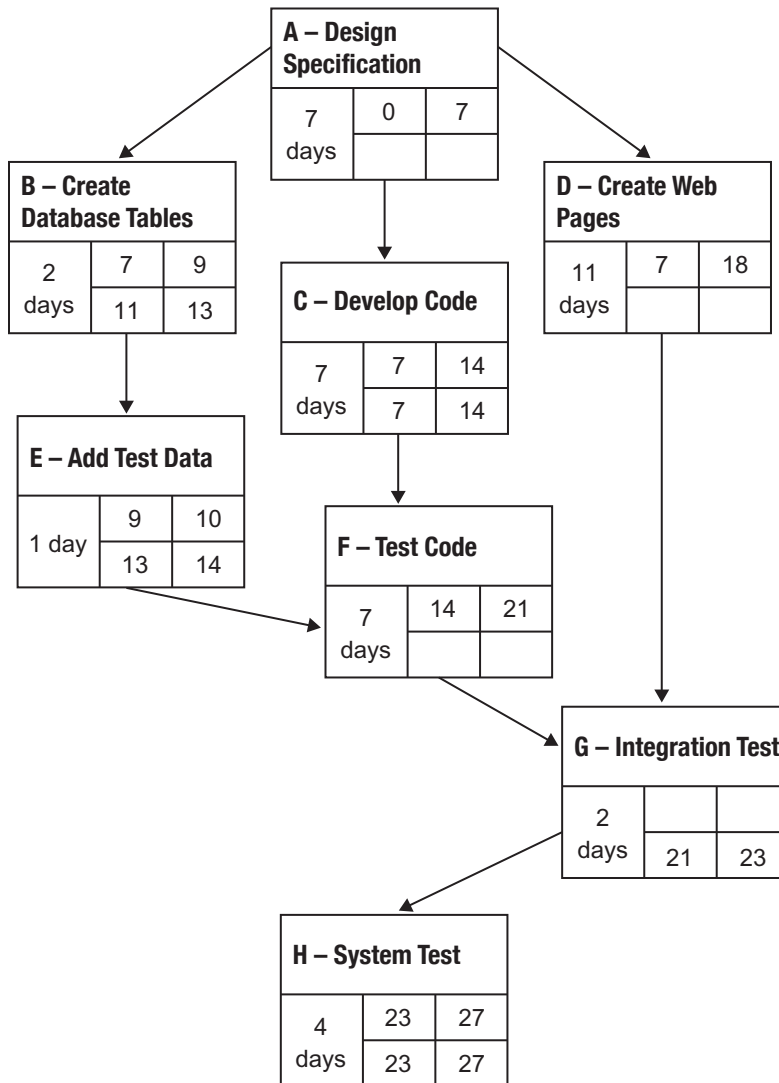
STATEMENT	TRUE/ FALSE
Users are always excellent at describing their requirements for a new system.	
The test plan should be created early in the systems development lifecycle.	
Users should not be involved until the end of a lifecycle as they tend to change their minds all the time.	
User guides should be written by programmers as they know a lot of technical terms.	
Maintenance tends to be the shortest phase of the systems development lifecycle.	

[5]

Examiner Only	
Marks	Remark



- 5 (a) Fred wants to update his project plan. His network diagram is shown below. Some start and finish times have been deleted. Complete the network diagram shown below by putting in the missing start and finish times in the spaces provided.



[8]

- (b) What is the shortest time needed to complete the project?

\_\_\_\_\_ [1]

- (c) Which two activities have the largest float?

\_\_\_\_\_ [2]

Examiner Only	
Marks	Remark



(d) The database programmer will be off sick for five days. She was about to begin activity B on day 7. She cannot be replaced, so how will this affect the overall project plan?

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[2]

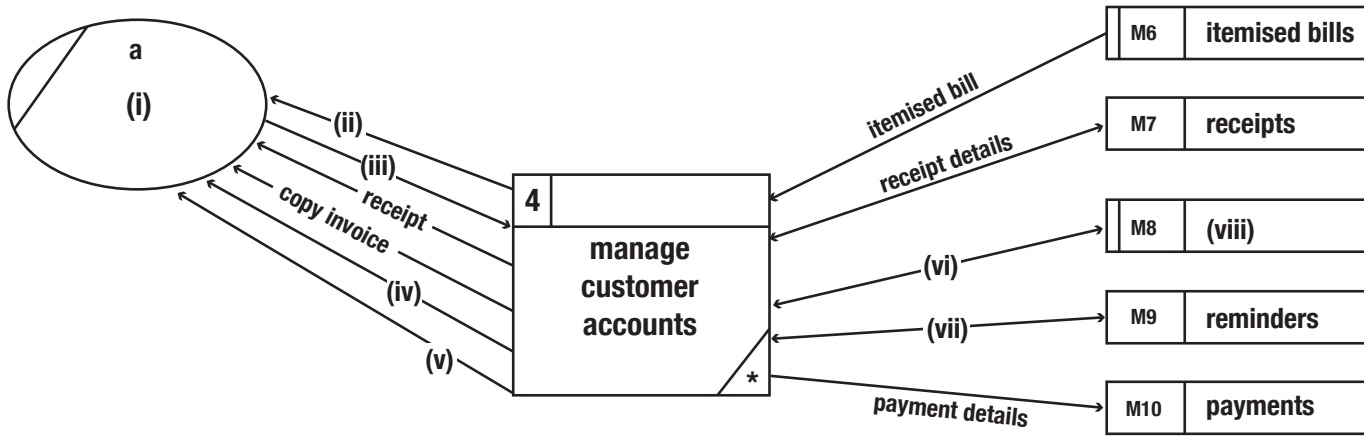
Examiner Only	
Marks	Remark



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**(Questions continue overleaf)**

7 Fred decides to create Data Flow Diagrams (DFD) to show the flow of data through the current system.

(a) Complete the following partial level-1 data flow diagram by identifying the missing elements. Write your answers in the spaces provided.



- (i) \_\_\_\_\_
- (ii) \_\_\_\_\_
- (iii) \_\_\_\_\_
- (iv) \_\_\_\_\_
- (v) \_\_\_\_\_
- (vi) \_\_\_\_\_
- (vii) \_\_\_\_\_
- (viii) \_\_\_\_\_

[8]

(b) In the new system invoices will be stored in a data store. Draw the symbol that will represent this.

[2]

Examiner Only	
Marks	Remark

(c) Fred wants to complete the DFD at level-1.

Write down **two** additional processes that could be included.

Process 1 \_\_\_\_\_

\_\_\_\_\_

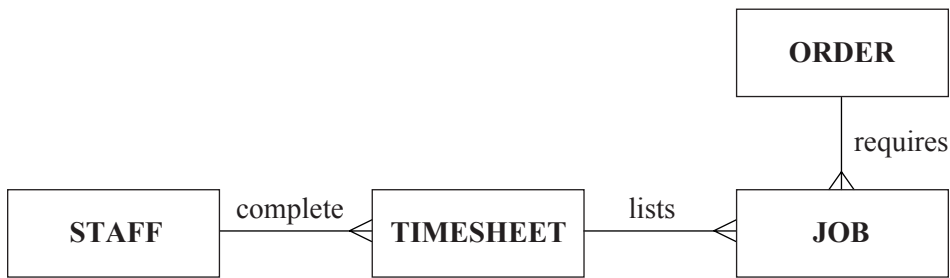
Process 2 \_\_\_\_\_

\_\_\_\_\_ [2]

Examiner Only	
Marks	Remark

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- 8 Fred has designed some database tables to hold information on staff and the time they spend on jobs for each order.



- (a) Using the above diagram, complete the following table writing down which statements are **true** and which are **false**.

STATEMENT	TRUE/ FALSE
A timesheet can be completed by more than one member of staff.	
An order may have only one job associated with it.	
Each staff member can complete many jobs.	
A member of staff completes a weekly timesheet listing one or more jobs they completed that week.	

[4]

Examiner Only	
Marks	Remark

Fred has also designed a spreadsheet for staff to complete each week. He wants to connect the spreadsheet to the database. A draft of the spreadsheet is shown below.

**FIONA'S FASHIONS**

**TIMESHEET**

Timesheet No	4008
Staff Number	SF004
Staff Name	Rose Watt
Year	2013
Week	16
Total Hours Worked	13

**JOBS COMPLETED**

Job No	Date of Job	Job Description	Hours Spent	Order No
1	19/04/2013	Sewed hems on wedding dress	3	ON0567
2	20/04/2013	Sewed sequins on bodice	4	ON0567
3	21/04/2013	Sewed hem on train	3	ON0567
4	21/04/2013	Attached underskirt	1	ON0567
5	22/04/2013	Turned up trousers	2	ON0569



(b) Using the information provided, tick (✓) which table(s) in the database will contain the data needed.

DATA ITEM	STAFF	TIMESHEET	JOB	ORDER
Staff Number				
Job No				
Hours Spent				
Order Number				
Timesheet No				

[5]

(c) Explain, using a suitable example from above, what is meant by a **foreign key**.

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[2]

(d) Write down **two** other fields that would be included in the ORDER table.

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[2]

(e) Explain how Total Hours Worked will be obtained.

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[2]

Examiner Only	
Marks	Remark

9 A test plan is used to monitor the progress of testing.

(a) Tick (✓) all those items which could be included in a typical test plan.

TEST PLAN ITEMS	
Timing of the tests	
Personnel who will perform the tests	
Testing tools	
Test results	
Algorithms	
System evaluation	
Types of tests to be used	
Dataflow diagrams	

[4]

(b) A storyboard being developed for a proposed bridal hire e-commerce system is shown below.

**FIONA'S BRIDAL HIRE** You have 4 items in your shopping basket.

Picture of **Romantic** Wedding dress

Dresses will only be displayed if available.

Picture of **Rose** flower girl dress

**Romantic**

Cost: £300.00  
Description: A beautiful flowing dress.  
Sizes Available: 10, 12, 16, 18

Add to Basket

**Rose**

Cost: £100.00  
Description: An enchanting dress.  
Sizes Available: 3yrs, 5yrs, 6yrs

Add to Basket

Click to view Basket

Size will only show in drop down list box if available

Previous Page Next Page

Examiner Only	
Marks	Remark

(i) Tick (✓) in the table below to show the type of testing involved.

TEST	PROGRAM	SYSTEM	ACCEPTANCE	Examiner Only	
				Marks	Remark
User checks how easy it is to add a dress to the shopping basket.					
Check that only dresses in the database which are available for hire are displayed on the web page.					
Check that the calculation for the number of items in the shopping basket is correct.					
Web programmer checks that the web page matches the storyboard.					

[4]

(ii) Who will create the test plan?

\_\_\_\_\_ [1]

(iii) Who will perform the system tests?

\_\_\_\_\_ [1]

(iv) Name **two** items, other than software, that should be tested.

\_\_\_\_\_  
 \_\_\_\_\_ [2]

(v) Write down one advantage of using the storyboard to help with the test plan.

\_\_\_\_\_ [1]



11 Fred decides to offer three types of customer support for when the system is in use:

- On-site visits by an expert technician
- Remote PC repair
- On-line user and technical guides

He wants to ensure that all staff know when they should use each type of support.

Complete the table below by ticking (✓) the best support option that should be used for each problem.

PROBLEM	ON-SITE VISITS	REMOTE PC REPAIR	ON-LINE GUIDES
The hard drive in Doreen’s computer has failed.			
The software has been infected by a virus.			
Fiona wants to know how to create a backup.			
The users want to know how to search the database for wedding dresses.			
Frances is on holiday and Fiona wants to create payslips for the employees.			

[5]

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**THIS IS THE END OF THE QUESTION PAPER**

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Examiner Only	
Marks	Remark





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