

SAMPLE ASSESSMENT MATERIAL

Level 1/2 Cambridge National Certificate in Information Technologies

R012/01 - Understanding tools, techniques, methods and processes for technological solutions

Date – Morning/Afternoon

Time Allowed: 1 hour 45 minutes



First Name		Last Name	
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Centre Number						Candidate Number				
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Date of Birth									
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INSTRUCTIONS

- Use black ink.
- Complete the boxes above with your name, centre number and candidate number.
- Answer **all** the questions.
- Write your answer to each question in the space provided. If additional space is required, use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.
- Do **not** write in the bar codes.

INFORMATION

- The total mark for this paper is **80**.
- The marks for each question are shown in brackets [].
- This document consists of **16** pages.

Version 1 August 2017

Key changes to the version published as draft. The questions have been renumbered and key changes are indicated by black lines.

Answer **all** the questions

- 1 You are checking your data for accuracy.

What phase of the project life cycle is this?

[1]

- 2 You have been given a target of four weeks to complete a project.

What aspect of SMART is this?

[1]

- 3 The image below in **Fig 1** represents components from a PERT chart.

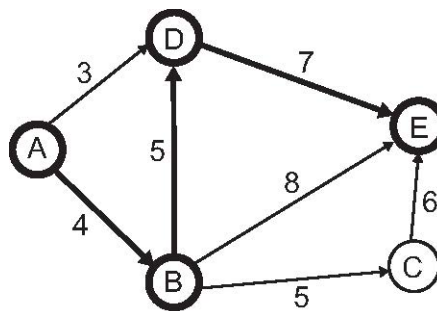


Fig 1

- a) What are components A and B called?

[1]

- b) What is the purpose of the directional arrow from A to B?

[1]

- 4 What are the data types used in columns **C** and **D** in table 1?

A	B	C	D
PD123	John Jones	23/10/2017	Y
PD428	Simon Brown	01/11/2017	N
PD758	Gail Mason	14/09/2017	Y

Table 1

C _____

D _____

[2]

- 5 A hotel collects feedback from guests about their stay.

Describe **one** IT method that could be used to collect this feedback.

[2]

- 6 What is the correct terminology for a group of infected computers controlled by a person to commit cyber-crime?

[1]

- 7 A charity wants to present the totals raised from fund raising events over a year.

What is the most appropriate type of graph for presenting this information?

[1]

Turn over

A project team has to collect data about people’s use of a local bus route. The data has to be collected when people are using the bus.

The data will be used to decide if the buses are big enough, if the route is only used at certain times of the day or if the route needs more buses.

The collected and processed data will be given, as an integrated document, to an audience. The audience for the integrated document will include people who use the bus route, the transport department who provide the money to run the bus route and the company who provides the buses and drivers.

The collected data and processed results will be presented by a member of the project team at a community meeting with the data also being available online.

8 The objectives for this project will need to be set by the project team.

Explain how setting correct objectives can help ensure the final product meets the project requirements.

[4]

9 The project team will use a tablet to collect the required data in a questionnaire.

Describe **one** disadvantage of using a tablet to collect this data.

[2]

10 Another way of collecting data is through the use of a sensor.

Explain **two** advantages of using a sensor to collect the data when people use a bus route.

Advantage 1 _____

Advantage 2 _____

[4]

11 The results from processing the data will be delivered by the project team at a community meeting where Internet access is not available.

(a) Which type of software application would be selected to communicate this information?

[1]

(b) Justify your choice of software application.

[4]

12 The integrated document will be made available to people who cannot attend the meeting.

Describe **one** distribution channel that could be used to share the integrated document?

[2]

13 The data and processed results will be stored online.

Identify and describe **one** threat to this data when it is stored online.

[3]

Turn over

An online retailer sells pet accessories. The retailer has a loyalty scheme where customers can collect points based on the cost of each purchase they make. Every three months the points are converted to a money off voucher to be used for the next order.

When a customer places an order on the website the items are moved into a shopping cart. When the customer has finished selecting the items they wish to purchase, they are required to enter the delivery details e.g. date and location for delivery, their loyalty scheme reference number and their payment details.

The order is processed by the online retailer's computer system and a confirmation email is sent to the customer. The system also updates the information in the customer database with the number of points the customer has earned from their purchase.

14 The collected data needs to be stored using a loyalty scheme reference before it is processed. An example of a loyalty scheme reference for a customer is MKN6394294.

(a) Identify the data type you would select to store this information.

[1]

When customers have placed orders the loyalty scheme points are collected and added to the customer database.

(b) Identify the processes which occur when the system updates the customer database after an order has been made.

[4]

15 The company uses email to inform customers about special offers.

(a) Describe **one** advantage to the company of using email to provide information about special offers.

[2]

(b) (i) Identify **one other** IT method that the company could use to tell customers about special offers.

[1]

(ii) Why did you select this IT method?

[2]

Turn over

16 The customer database stores details about the customers, including their names and addresses.

(a) Identify **one** legislative requirement which relates to the storage of customer data.

[1]

(b) Describe **two** security measures that would need to be put in place when securing customer data.

1. _____

2. _____

[4]

17 The retailers website has been flooded by malicious requests from all over the world.

(a) Identify the type of attack that has taken place.

[1]

(b) Describe the system vulnerabilities that may have allowed this attack to succeed.

[4]

Turn over

A sports centre is setting up a project to collect data about people's swimming activities.

If people want to allow this data about their activities to be collected, they must register before taking part. The registration details will include their name, address and contact details including telephone numbers and email addresses.

When they have completed the registration a user name and password will be allocated. This user name and password must be entered before the data is input.

Each person would have to input the number of lengths they swam, the total time they took to swim the lengths and their age.

At the end of every month each person will get an individual report. The report will show:

- their personal details
- the number of lengths they swam
- the amount of time they swam for
- the average time taken to swim a length.

A software development company will work on the project and carry out all phases of the project life cycle. It will liaise with staff of the sports centre during the project life cycle. The sports centre has asked that the project be completed within two months.

- 18** The software development company has been asked to plan the project using planning tools.

Evaluate the use of planning tools to plan this project.

[10]

19 During the planning phase, the software development company identified they needed further details about the contents of the individual reports from the sports centre staff.

At what phase of the project life cycle should they have received this information?

[1]

20 The swimmers' details and data will be stored in the cloud.

Discuss the impacts on the sports centre if the cloud storage area is the target of a cyber-security attack.

[8]

21 The swimmers' data is stored in a database. The swimmers will be provided with monthly reports.

(a) Explain **one** advantage of using a database to create these reports for the swimmers.

[2]

(b) Identify **one** other method for providing the swimmers with this information.

[1]

22 The sport centre wants to use the information to help promote the benefits of swimming as part of a Keep Fit Week. Any information used must comply with current legislation.

Explain what data the sports centre would be permitted to use and how they could present it.

[4]

Turn over

- 23 During the evaluation phase, recommendations are made about possible improvements in the way that the swimmers' data is captured.

One recommendation is that the data is captured using wearable technology.

Explain **one** advantage and **one** disadvantage to the swimmers of using wearable technology.

Advantage _____

Disadvantage _____

[4]

END OF QUESTION PAPER

OCR

Oxford Cambridge and RSA

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Oxford Cambridge and RSA

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Sample Assessment Material

Level 1/2 Cambridge National Certificate in Information Technologies
0000/00 Unit R012/01

MARK SCHEME

Duration: 1 hour 45 mins

MAXIMUM MARK 80

SPECIMEN

Last updated: **August 2017**

(FOR OFFICE USE ONLY)

This document consists of 14 pages

PREPARATION FOR MARKING ON-SCREEN

1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: *scoris assessor Online Training* and the *OCR Essential Guide to Marking*.
2. Make sure that you have read and understood the Instructions for On-Screen Marking and the mark scheme and the question paper for this unit. These are posted on the RM Cambridge Assessment Support Portal.
3. Log-in to scoris and mark the **required number** of practice responses and the **required number** of standardisation responses.

PREPARATION FOR PAPER BASED MARKING

1. Make sure that you have accessed and completed the relevant training for paper based marking.
2. Make sure that you have read and understood the Instructions for Specialist Marking and the mark scheme and the question paper for this unit.
3. Before the Standardisation meeting you must mark at least 10 scripts from several centres. Use **pencil** and follow the **mark scheme**. Bring these **marked scripts** to the meeting

MARKING INSTRUCTIONS – FOR MARKING ON-SCREEN AND FOR PAPER BASED MARKING

1. Mark strictly to the mark scheme.
2. Marks awarded must relate directly to the marking criteria.
3. The schedule of dates is very important. It is essential that you meet the scoris 50% and 100% (traditional 40% Batch 1 and 100% Batch 2) deadlines. If you experience problems, you must contact your Team Leader (Supervisor) without delay.
4. If you are in any doubt about applying the mark scheme, consult your Team Leader by telephone or the scoris messaging system, or by email.
5. Work crossed out:
 - a. where a candidate crosses out an answer and provides an alternative response, the crossed out response is not marked and gains no marks
 - b. if a candidate crosses out an answer to a whole question and makes no second attempt, and if the inclusion of the answer does not cause a rubric infringement, the assessor should attempt to mark the crossed out answer and award marks appropriately.
6. Always check the pages (and additional objects if present) at the end of the response in case any answers have been continued there. If the candidate has continued an answer there then add a tick to confirm that the work has been seen.
7. There is a NR (No Response) option. Award NR (No Response)
 - if there is nothing written at all in the answer space
 - OR if there is a comment which does not in anyway relate to the question (e.g. 'can't do', 'don't know')
 - OR if there is a mark (e.g. a dash, a question mark) which isn't an attempt at the question

Note: Award 0 marks - for an attempt that earns no credit (including copying out the question)

8. The scoris **comments box** is used by your team leader to explain the marking of the practice responses. Please refer to these comments when checking your practice responses. **Do not use the comments box for any other reason.**

If you have any questions or comments for your team leader, use the phone, the scoris messaging system, or e-mail.

9. For answers marked by levels of response:
- To determine the level** – start at the highest level and work down until you reach the level that matches the answer
 - To determine the mark within the level**, consider the following:

Descriptor	Award mark
On the borderline of this level and the one below	At bottom of level
Just enough achievement on balance for this level	Above bottom and either below middle or at middle of level (depending on number of marks available)
Meets the criteria but with some slight inconsistency	Above middle and either below top of level or at middle of level (depending on number of marks available)
Consistently meets the criteria for this level	At top of level

10. These are the annotations, (including abbreviations), including those used in scoris, which are used when marking

Annotation	Meaning of annotation

11. Here are the subject specific instructions for this question paper

Subject specific marking instructions that apply across the whole question paper must appear here. These must be compatible with the OCR Marking Instructions above. Include here any instructions for marking when a candidate has infringed the rubric.

12. Here is the mark scheme for this question paper.

MARK SCHEME FORMAT

Question		Answer/Indicative content	Mark	Guidance
1		<ul style="list-style-type: none"> • Execution (1) 	1	Correct answer only (CAO)
2		<ul style="list-style-type: none"> • Time/timescale (1) 	1	CAO
3	a	<ul style="list-style-type: none"> • Node(s)/milestone(s) (1) 	1	CAO
	b	<ul style="list-style-type: none"> • The purpose of the directional arrow represents dependent tasks that must be completed in order (1) 	1	CAO
4		<ul style="list-style-type: none"> • C = Date (1) • D = Boolean (1) 	2	CAO
5		<ul style="list-style-type: none"> • Online/automated survey (1st), has embedded questions that guests respond to about quality of stay (1) • Email feedback (1st), questions emailed out to guests about quality of meals (1) • Any other valid answer 	2	Accept answers relating to the contents of a survey or the method by which the survey can be completed.
6		<ul style="list-style-type: none"> • Botnet (1) 	1	CAO
7		<ul style="list-style-type: none"> • Line/Bar (1) 	1	

Question	Answer/Indicative content	Mark	Guidance
8	<ul style="list-style-type: none"> • The product will be delivered to the correct specification (1) within the agreed timescales (1) • Time will not be wasted (1) as all members of the project team understand their roles and responsibilities (1) • Objectives are clearly measurable (1) which provides a way of checking that you are delivery the project as intended/planned (1) • Any other valid answer 	4	Points marking approach.
9	<p>Technical Responses:</p> <ul style="list-style-type: none"> • The battery life may be short (1) and run out of battery before all the data is collected/sync with server (1) • The questions are likely to be closed (1) so only objective answers are gathered (1) • The type of data input (1) can be limited by the features/radio button/drop down list (1) <p>Non-Technical Responses:</p> <ul style="list-style-type: none"> • Dirt on the screen (1) may mean that incorrect results are input (1) • Older people may not know how to use a tablet (1) so the team may have to input the results for them (1) • The tablet may be dropped/damaged (1) so the data may not be collected on that bus (1) • Any other valid answer 	2	<p>Points marking approach.</p> <p>Learner may take a technical or none technical approach to answering this question.</p> <p>The focus of the question is the use of a tablet not the questionnaire which is being completed.</p>

Question		Answer/Indicative content	Mark	Guidance
10		<ul style="list-style-type: none"> • The sensor could count when people get on and off the bus (1), so this will save time (1) • The counting of people happens automatically (1) so there is less chance for human error (1) • People don't have to answer direct questions (1) which will avoid false information being collected (1) • Any other valid answer 	4	Points marking approach.
11	a	<ul style="list-style-type: none"> • Presentation (1) • Spreadsheet (1) • Word processing/DTP (1) 	1	DNA Internet based responses (e.g. websites only accessible via the internet).
	b	<p>If presentation software is chosen:</p> <ul style="list-style-type: none"> • The presentation can use a variety of components (1) e.g. animation/graphs/text (1) • The presentation can have links to other media/resources (1) e.g. a hyperlink to a website/video (1) • The presentation can be shown using manual/automatic transitions (1) • if questions are asked (1) then the presentation can be stopped on the relevant screen (1) • Any other valid answer 	4	<p>Points marking approach.</p> <p>To be awarded marks part (i) must be correct.</p> <p>Note: Exemplification included for presentation software, in a live paper we would provide exemplification for other possible responses.</p>

Question		Answer/Indicative content	Mark	Guidance
12		<p>The information could be:</p> <ul style="list-style-type: none"> • emailed to other people as an attachment (1) or within the main body of the email (1) • stored on the cloud (1) so that people with appropriate access rights to access it at anytime, anywhere (1) • shared via social media (1) such as uploading it onto Facebook (1) or including a link to the organisations website via Twitter (1) • Any other valid answer 	2	Points marking approach.
13		<ul style="list-style-type: none"> • Unauthorised access/hacking (1st) The data can be accessed by someone who does not have permission (1) and can carry out destructive activities/destruction/theft/modification (1) • Virus (1st) can be installed onto the data (1) so when the data is downloaded it is installed onto the destination IT device (1) • Any other valid answer 	3	<p>1st mark for identification of method, further 2 marks for description.</p> <p>Methods must be relevant to context.</p>
14	a	<ul style="list-style-type: none"> • Alphanumeric 	1	
	b	<ul style="list-style-type: none"> • Customer record located in database (1) • Payment is processed and accepted (1) • Cost of order converted to points (1) • New points added to current points total (1) • Total points updated in customer record (1) • Voucher is issued if the timescale is three months (1) • Any other valid answer/step which links to the loyalty scheme 	4	<p>Points marking approach.</p> <p>The processes do not have to be given in the correct order.</p>

Question			Answer/Indicative content	Mark	Guidance
15	a		<ul style="list-style-type: none"> • Many customers (1) can be emailed at the same time (1) • Attachments can be sent (1) for example further offers/details (1) • Links (1) to the website can be included in the email (1) • Any other valid answer 	2	<p>Points marking approach.</p> <p>The focus of the question is on the advantages to the company not the customers.</p>
	b	i	<ul style="list-style-type: none"> • Social media (1) • Web banners (1) • Galleries (1) • Blog/Vlog (1) • Any other valid answer 	1	
		ii	<ul style="list-style-type: none"> • People who are not customers (1) may see the social media page and buy from the company (1) • Products can be shown being used (1) which can provide more detail than words (1) • Any other valid answer 	2	<p>Points marking approach.</p> <p>The answer must relate to the method provided in part (ii).</p>
16	a		<p>Customer data and information:</p> <ul style="list-style-type: none"> • must not be accessible by unauthorised people (1) • must be accurate(1) • must only be used for its intended purpose (1) • Any other valid answer relating to current DPA legislation 	1	

Question		Answer/Indicative content	Mark	Guidance
	b	<ul style="list-style-type: none"> • Encryption (1) information and data will be converted into a code which prevent unauthorised access(1) • Restricted access to database (1) only those with authorised access can sign-in to use or amend the database (1) • Antivirus software (1) can be used to prevent/detect/remove malware that may attack customer information (1) • Any other valid answer 	4	<p>Points marking approach.</p> <p>Two from list, max 2 per description.</p>
17	a	<ul style="list-style-type: none"> • Distributed Denial of Service/DDoS (1) 	1	CAO
	b	<ul style="list-style-type: none"> • Weak passwords (1) that can be easily guessed by potential hackers (1)/allowing them access to the system (1) • Social engineering (1) potential cyber-criminals will manipulate people to get access to the retailers website (1) • Insecure software applications (1) which may allow cyber-criminals to plant viruses/malware in the system (1) • Any other valid answer 	4	<p>Points marking approach.</p> <p>The vulnerabilities – which can be exploited in a cyber-security attack.</p>

Question	Answer/Indicative content	Mark	Guidance
18	<p>Answers may include:</p> <p>Advantages</p> <ul style="list-style-type: none"> • Provides a structured plan • All aspects of project can be considered – time, budget, tasks, people • Visual representation can show links between tasks, dependencies, and concurrent tasks • Tasks can be mapped against the project time scale to be referred back to during the project • Any other valid answer <p>Disadvantages</p> <ul style="list-style-type: none"> • Can be difficult for non-specialists to understand • Not all variants may be known/may change as project progresses • Can be too rigid and initial planning may be unrealistic • Any other valid answer <p>Examples</p> <ul style="list-style-type: none"> • Sports centre staff may not be specialist and so may find it difficult to interpret plans • User requirements may change so lead/lag time needs to be included • Any other valid answer 	10	<p>Levels of response marking approach.</p> <p>7-10 marks Learner has shown a detailed level of understanding by evaluating the use of formal planning tools. Advantages and disadvantages will be considered with more than one of each being considered in detail. Relevant and appropriate examples are provided. Specialist terms will be used correctly and appropriately.</p> <p>4-6 marks Learner has shown a good level of understanding by explaining the use of formal planning tools Explanations may focus on the advantage(s) or disadvantage(s) with limited depth in the expansion(s). Some relevant examples are provided although these may not always be appropriate. Specialist terms will be used appropriately and for the most part correctly.</p> <p>1-3 marks Learner has identified points relevant to the use of formal planning tools This may take the form of a bulleted list. Examples, if used, may lack relevance. There will be little, if any, use of specialist terms.</p> <p>0 marks Nothing worthy of credit.</p>
19	<ul style="list-style-type: none"> • Initiation (1) 	1	CAO

Question	Answer/Indicative content	Mark	Guidance
20	<p>Answers may include:</p> <ul style="list-style-type: none"> • Loss of reputation as people may not feel able to trust the sports centre with details • Loss of revenue as the number of people going to the sports centre may decrease • Financial cost as compensation may have to be paid to the people whose details have been targeted • Data/information held on the cloud may have to be collected again leading to an increase in staff costs to carry out this task • Distribution channels are compromised, which can result in the false distribution of data or the distribution channels are redundant/destroyed • Any other valid answer 	8	<p>Levels of response marking approach.</p> <p>6-8 marks Learner has shown a detailed level of understanding by discussing the impacts on the sports centre. More than one impact is discussed with the consequence(s) clearly detailed. Relevant and appropriate examples are provided. Specialist terms will be used correctly and appropriately.</p> <p>3-5 marks Learner has shown a good level of understanding by explaining the impacts on the sports centre. Explanations may focus on the impact(s) or consequence(s) with limited depth in the expansion(s). Some relevant examples are provided although these may not always be appropriate. Specialist terms will be used appropriately and for the most part correctly.</p> <p>1-2 marks Learner has identified points relevant to the impacts on the sports centre. This may take the form of a bulleted list. Examples, if used, may lack relevance. There will be little, if any, use of specialist terms.</p> <p>0 marks Nothing worthy of credit.</p>

Question		Answer/Indicative content	Mark	Guidance
21	a	<ul style="list-style-type: none"> The information is already in the database (1), it does not have to be copied into another software package (1) It enables queries to be used for the automatic creation of reports (1), which can then be merged with a word processed application for presenting to the swimmers (1) Any other valid answer 	2	
	b	<ul style="list-style-type: none"> Upload to an app (1) Combined graphs/charts (1) Email attachment (1) Text Message (1) 	1	
22		<ul style="list-style-type: none"> Any data that does not contain personal information (1) such as number of times attending the centre (1) how many lengths they swam by age range (1) By producing graphs/charts to show how people had got fitter the more they swam (1) comparison of performance against their current personal ability/peers (1) Any other valid answers 	4	<p>DNA for identification of personal or restricted data.</p> <p>1 mark for identifying permitted data. 1 mark for examples of data that can be used. 1 mark for style of presentation. 1 mark for how they would use the permitted data.</p>

Question	Answer/Indicative content	Mark	Guidance
23	<p>Advantages</p> <ul style="list-style-type: none"> • The technology means they don't have to count (and possibly loose count of) (1) the number of lengths they have done (1) • The progress can still be tracked without having to input the data (1) • Any other valid answer <p>Disadvantages</p> <ul style="list-style-type: none"> • The technology may not be totally accurate (1) it may miscount the number of laps they complete/example (1) • If the swimmers forget the technology (1) they may not be able to use that data from the day's swimming session (1) • Any other valid answer 	4	Max 2 per advantage/disadvantage.