GCSE

4332/01

INFORMATION AND COMMUNICATION TECHNOLOGY

Unit 2 Solving Problems with ICT

CONTROLLED ASSIGNMENT

For submission in May 2021 or May 2022

INSTRUCTIONS TO CANDIDATES
Read the given scenario.

You will have 22½ hours to complete these tasks. Research tasks can be carried out outside timed conditions.

It is important that you work independently from other candidates and make sure that what you submit is your own unaided work.

Read the tasks carefully to make sure that you understand what is needed. Refer to the marking guidance for each task to help you.

Carry out all tasks and make sure that you check your work carefully to ensure that the work you produce is accurate and correct.

Save your work regularly.

INFORMATION FOR CANDIDATES
Teachers and students will be required to sign a declaration that all work presented is the work of the candidate alone. Failure to authenticate the work may result in grades being delayed or refused.

The quality of written communication will be assessed in your evaluation.

New product development.

A new company wants to plan how to promote its products or services. In order to do this it must consider the target audience and how it will advertise products or services to that audience.

It plans to advertise both online and with printed publications.

As part of its planning, it wants to investigate the costs of different forms of printed publications. Details of various printing costs are kept on a database for use in these investigations.

It also wants to investigate how many products it must sell in order to break even and then make a profit.

In order to prepare for this, you have been asked to:

(i)   produce a newsletter to advertise one or more of the company's products or services;

(ii) produce a screen-based presentation to advertise one or more of the company's products or services;

(iii) import a data file with details of printing costs and add suitable extra data and fields so that this data could be used as part of the investigation;

(iv) use spreadsheet software to investigate how many products or services it needs to sell in order to break even.

You must undertake the following tasks to research, design and implement an ICT system to enable the company to conduct its investigations and promote its products or services.

IN YOUR DESIGNS MAKE SURE YOU REFER TO THE MARKING SCHEME FOR EACH TASK TO ENSURE YOU GAIN AS MANY MARKS AS POSSIBLE.

<u>**Organise and store this information in a suitable folder structure**</u>   **(5 marks)**
Task 1
You must organise your work, so it is easy to find and use suitable folders and file names. Ensure your work is backed up appropriately.

<u>Research</u>   **(6 marks)**
Task 2
Collect information and pictures about suitable products or services.
Keep a log and evidence of your sources of information and store this information in appropriate folders. You may use online or non-electronic methods of collecting data.

<u>Communicating information</u>   **(2 marks)**
Task 3
Create the first draft of a newsletter containing details of the products or services the company offers.

Task 4
Create the first draft of a presentation using at least 3 slides *or* a website using at least 3 pages to promote the products or services the company offers.

<u>Email</u>   **(6 marks)**
Task 5
Attach the first drafts of your newsletter and presentation *or* web pages to a suitable email and send it to a friend or group of contacts asking for their comments on how to improve both your drafts.

Ensure you keep screenshot evidence.

Open the reply or replies which have been sent to you and save them in a suitable format for use later.

<u>Communicating information and formative evaluation</u>

Formative Evaluation
<u>Review</u>   **(6 marks)**
Task 6
(i)   Comment on how your own work could be improved.
(ii) Consider the screenshot comments received from others about your drafts.

<u>Redraft in response to comments</u>   **(2 marks)**
Task 7
(i) Improve your newsletter using the advice received and your own ideas.
(ii) Improve your presentation *or* web pages using the advice received and your own ideas.

Production of final documents (14 marks)

Task 8
(i) **Newsletter**
  • Complete the newsletter using basic and advanced skills.
  • Check it for accuracy.

 (ii) **Presentation or web pages**
  • Complete the presentation *or* web pages using basic and advanced skills.
  • Check it for accuracy.

Data Handling

Task 9 (12 marks)
Develop the data file *'Printing'*.
In order to do this, you must complete the following:

  (i)   Import the CSV *'Printing'* file your teacher will give you into a database.

  (ii) Add a suitable keyfield.

  (iii) Add a suitable validation technique to the keyfield.

  (iv) *A*dd up to **two** extra suitable fields.

  (v) Ensure suitable data types for these two extra fields and also ensure a variety of data types.

  (vi) Add details of any **two** sensible records to the existing database.

  (vii) The printing firm no longer does A2 posters. Delete this record from the database.

Task 10
Use your data file to:

(i)   Sort the database in *ascending order* of **Size** to find a size required quickly.

(ii)   Search for all the publications which can be **folded** as the company wants to investigate the costs of these.
Create and save a list of only these publications.

(iii)   The company wants to investigate the price of having a **newsletter printed in colour**
Create and save a list of only these publications.

(iv)   Show the validation technique works.

Task 11   **(4 marks)**

Using advanced skills, implement **four** other improvements to this database.

Modelling

Task 12   **(14 marks)**
1. Create a spreadsheet model to:
    •   store details of units of products or services;
    •   store details of the various fixed costs and variable costs;
    •   store details of selling prices;
    •   store details of potential sales.

2. Your spreadsheet must be able to:
    •   automatically calculate the *total cost*s;
    •   automatically calculate the income from projected sales
    •   automatically calculate the *total profit* or loss;
    •   automatically calculate the *break-even point.*

3. You must produce a **graph** to compare projected profit and loss over time.

4. Complete the spreadsheet:
    •   using basic and **four** advanced skills;
    •   Check it for accuracy or implausible data;
    •   Screenshot the whole of your spreadsheet in data and formula view;
    •   Write an explanation of the data, formulas, functions or any other features you have used.

Task 13   **(2 marks)**

Use this spreadsheet to do *at least* **two** 'what if' investigations.

(i)   One of your *'what if'* investigations may just change an item of numerical **data**. You must describe the purpose of your investigation and what was the result of your investigation.

(ii)   The other *'what if'* investigation must alter an **existing formula.** You must describe the purpose of your investigation and what was the result of your investigation.

Summative Evaluation   **(7 marks)**

Task 14

Produce an evaluation of your work. You should evaluate:

- analysis of data and information used in modelling
- analysis of data and information used in data handling
- evaluation of final documents, web pages or presentation produced, and review feedback given and received
- evaluation of other tools and techniques
- suggestions for improvements
- analysis of research methods / data
- evaluation of working practice.

GUIDANCE FOR CANDIDATES
Your work for this assignment will be marked against the following assessment scheme.

Unit 2 Solving Problems with ICT - Outline Scheme of Assessment	
File handling	**5**
Research and data collection	**6**
Email	**6**
Communicating information	**16**
Modelling	**16**
Data handling	**16**
Evaluation	**15**
Total	**80**

IT 2 Essential Skills   **Controlled Test**

Controlled Task		Maximum Mark
Organisation of folders and files		
	1 mark for each to MAX of 5 • Store a file(s) • Use of folders • Use of subfolders and their files • Sensible naming of files and folders • Evidence of backup folders on an external device • Demonstrate careful version management • Evidence of at least two different folder operations e.g. copy, move • Organise emails, groups and folders.	
Total		**5**
RESEARCH AND DESIGN		
RESEARCH	**1 mark for each to MAX of 6** • use of online information sources • use a url for a purpose • use search engines for different purposes • manage and use references to make it easier to find information again • download, organise and store different types of information • data collection from printed sources • data collection from other people	
Total		**6**

Email		
FURTHER RESEARCH	**1 mark for each to MAX of 6** • open email • save emails efficiently • create and send email • reply to email • send to a group • attach a file to an email • open attachment • use a contacts list – add amend and delete entry • forward an email • adapt style to suit purpose • contribute to blog or forum	
Total		**6**

IMPLEMENTATION

Communicating Information		
DRAFTS	**Create 2 DRAFT documents i.e. DTP / web or Powerpoint type presentation for different purposes**	2
Final Documents	**produce the final version of DTP / web or Powerpoint type presentation for different purposes**	2
Data entry	**Accuracy and plausibility and fitness for purpose**	2

Basic skills	**1 mark for each to MAX of 6**
	• use of appropriate page layout and formatting of data e.g.
	   ○ fonts and sizes
	   ○ simple formatting techniques e.g. bold, text alignment, colour fonts
	   ○ word art, borders, autoshapes, ○ simple tables or original templates ○ simple bullets or numbering
	• Insert, crop or resize and position an image fit for purpose
	• combine text with information in different forms *from a library* e.g. images, sound, Gif, video
	• on a web page or in a presentation, sequence a set of events e.g. simple animations
		6

Advanced skills	*Additional marks awarded for each one of the following to a MAX of 4 marks;* **Develop and format data** - e.g enhance tables with.borders, cell merging, text direction or rotation; text to tables - rotation or enhanced manipulation of image' - customised bullets using *internal* facilities; - numbering with subnumbering; - use of formulas in a document e.g. invoices etc. - use a **second** different sources for data e.g. digital image, sound, original graph. - mailmerging - headers **or** footers - page numbering on more than one page	4

	macros *(play and record macros)*	
Total		**16**

Modeling		
Data entry	**Create and use a spreadsheet model** Data entry. Explanation of formulas and features and functions used	2 2
	Accuracy and plausibility and fitness for purpose	1
Basic skills	**Develop and organise numerical data fit for purpose 1 mark for each to MAX of 5** - Currency, or % Decimal places, or grid - Use formula with single operator - Simple function e.g. SUM, Average, Max, Min RAND etc - Relative referencing - Create a chart - Have appropriate title legend axis labels and formating on the chart **Testing with investigations** - What if investigation changing data - What if investigation changing formula	5 1 1

| Advanced skills | **1 mark for each to MAX of 4** <u>Development of the model.</u>
Enhanced layout and format of the spreadsheet;
   •   enhanced grids/borders/ merged cell/text wrap
   •   headers or footers,
   •   forms/combo boxes/spinners
A wider variety of functions or advanced features e.g.
   •   IF, LOOKUP and COUNT functions
   •   absolute referencing
   •   sorts
   •   goal seek
   •   pivot tables / conditional formatting
   •   macros e.g. navigation etc
   •   testing.(more what if investigations) | 4 |
| **Total** | | **16** |

	Data Handling	

Basic skills	**Basic skills**
	   • Importing data from CSV file.
	   • adding key field
	   • adding fields with suitable fieldnames *(1mark 2 fields; 2 marks 4 fields)*
	   • adding suitable data types
	   • variety of data types *(At least two other than text)*
	   • adding suitable data to complete the file
	   • editing a record *as required or state a reason*
	   • deleting a record *as required or state a reason*
	Produce lists
	   • obtaining information fit for purpose using sort
	   • obtaining information fit for purpose using simple search.
	   • obtain information fit for purpose using a double searches(search within a search)
	   • add a validation technique
		7
		
		5

	testing that validation works	

Advanced skills	A range of more advanced skills e.g.
	   • create an on screen data entry form
	   • use logical operators and at least one wild card
	   • sort on multiple fields
	   • use of clearly explained logical operators
	   • use of a calculation
	   • use a report
	   • command buttons or macros
	   • VB enhancements
		4

Total		**16**
	Evaluation	

Level of depth and detail determines level 2 or level 3	**Formative process** **Review and redrafting of each document** • Make comments with criticisms and suggestions for improvements • Comments from others • Final quality production responding to comments **Summative process** • analysis of data and information used in modelling and data handling • evaluation of final documents /presentation or web pages and review feedback given and received • evaluation of other tools and techniques used suggestions for improvements • analysis of research methods and data collected • evaluation of working practice	4 2 2 7
Total		**15**
Max mark		**80**

NB Any research, including collection of data and images and keeping log of sources or any initial preparation classed as research and any reviewing can be done outside of the recommended 22.5 hours.