basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

COMPUTER APPLICATIONS TECHNOLOGY P1

NOVEMBER 2021

MARKS: 150

TIME: 3 hours

**This question paper consists of 16 pages, an HTML tag sheet,
an input mask character sheet, two pages for planning and
a separate information sheet.**

INSTRUCTIONS AND INFORMATION

1.   Owing to the nature of this practical examination, it is important to note that, even if you complete the examination early, you will NOT be permitted to leave the examination room until all the administrative tasks associated with the examination have been finalised. During the examination, the standard examination rules regarding leaving the examination room apply.

2.   If you are working on the network, or the data files have been preloaded on your system, you must follow the instructions provided by the invigilator/educator.

3.   At the end of the examination, you must make sure that ALL your answer files are saved on the network/computer as explained to you by the invigilator/educator.

4.   Make absolutely sure that all files can be read. Do NOT save unnecessary files/folders and **do NOT hand in duplicate answer files/folders. Do NOT delete any original files that you did not work on**.

5.   The information sheet that has been provided with the question paper **MUST BE COMPLETED AFTER THE THREE-HOUR EXAMINATION SESSION**. Hand it to the invigilator at the end of the examination.

6.   A copy of the master files will be available from the invigilator. Should there be any problems with a file, you may request another copy from the invigilator.

7.   This question paper consists of SEVEN questions. Answer ALL the questions.

8.   Read through each question before answering or solving the problem. Do NOT do more than is required by the question.

9.   Ensure that you save each document using the file name given in the question paper. Save your work regularly as a precaution against possible power failures.

10.   You may NOT use any resource material.

11.   Accuracy will be taken into account.

12.   Ensure that the regional settings are set to South Africa and date and time settings, number settings and currency settings are correctly set.

13.   In all questions involving word processing, you should set the language to English (South Africa). The paper size is assumed to be A4 Portrait, unless instructed otherwise. Use centimetres as the unit of measurement.

14.   Ensure that the Developer tab and Ruler are activated.

15.   Ensure that the decimal symbol is set as a full stop ('.') and the list separator is set as a comma (,).

16.   Formulae and/or functions must be used for ALL calculations in questions involving spreadsheets. Use absolute cell references only where necessary to ensure that formulae are correct when you copy them to other cells in a spreadsheet.

   NOTE: All formulae and/or functions should be inserted in such a manner that the correct results will still be obtained even if changes are made to the existing data.

17.   You may NOT use a word processing program such as Word to answer the HTML question.

18.   The examination data folder that you receive with this question paper contains the files listed below. Ensure that you have all the files before you begin with this examination.

• 1Clean	Image
• 1Health	Word processing file
• 2Marine	Word processing file
• 3Logo	Image
• 3Projects	Spreadsheet
• 4Air	Spreadsheet
• 5Save	Database
• 6_1Clean	HTML file
• 6_1Plastic	Image
• 6_2Pollute	HTML file
• 7Company	Spreadsheet
• 7Date	Spreadsheet
• 7Letter	Word processing file
• 7Picture	Compressed file

SCENARIO

Pollution is one of the biggest environmental concerns currently. Waste products may cause land, water and air pollution. A growing awareness of the negative impact of pollution encourages people to get involved in projects to stop pollution and clean up the environment.

QUESTION 1: WORD PROCESSING

Open the **1Health** word processing document and insert your examination number in the header or footer.

1.1   Change the page size of the document to A4.   (1)

1.2   Change the line spacing of the paragraph starting with 'The following is …' and ending with ' … by air pollution.' to be the same as the line spacing of the first paragraph.   (1)

1.3   Replace all the occurrences of the exact text 'ozone' to appear in Arial Narrow, bold and italic.   (3)

1.4   Insert a 9 cm high by 8 cm wide text box and move the text that begins with 'Nitrogen dioxide …' and ends with '… from heart disease.' into the text box.

The text box must display as shown below.

The top position of the text box is relative to the word 'air' and the bottom of the text box is relative to the word 'Ground'.

However, your symptoms may get worse when air pollution reaches the 7–9 (high) or 10 (very high) bands, especially if you are elderly. If this happens, you may need to change your treatment in the usual way. If these steps do not help, consult your doctor.

WHERE DOES AIR POLLUTION COME FROM?

The service reports daily outdoor levels of pollution, mostly from outdoor sources. Different sources are responsible for different pollutants. Road transport is the main source of nitrogen dioxide and carbon monoxide. Power stations and other industrial sources also produce nitrogen dioxide. Industry is the main source of Sulphur dioxide. Particles come from many sources, including road transport, power stations and other industry. The burning of wood or coal for home heating can also be an important source of Sulphur dioxide and particles. Ground level ozone is not emitted directly from any source. Instead it is formed when sunlight acts on nitrogen dioxide and other atmospheric substances close to the ground. The pollutants that cause ground level

Nitrogen dioxide

These gases irritate the airways of the lungs, increasing the Sulphur dioxide symptoms of those suffering from lung diseases.

Particles

Fine particles can be carried deep into the lungs where they can cause inflammation and a worsening of heart and lung diseases.

Carbon monoxide

This gas prevents the normal transport of oxygen by the blood. This can lead to a significant reduction in the supply of oxygen to the heart, particularly in people suffering from heart disease.

(4)

1.5   Find the text that begins with the heading 'DOES IT MAKE A DIFFERENCE WHERE I LIVE?' and ends with '… fuels and vehicles.'.

- Change the layout of the text to appear in two columns.
- Set the width of the first column to 8 cm.
- Set the space between the columns to 1 cm.   (3)

1.6   Find the text that begins with the heading 'On the road' and ends with '… keeping windows closed.'.

Apply multilevel list numbering to the text to display as shown below.
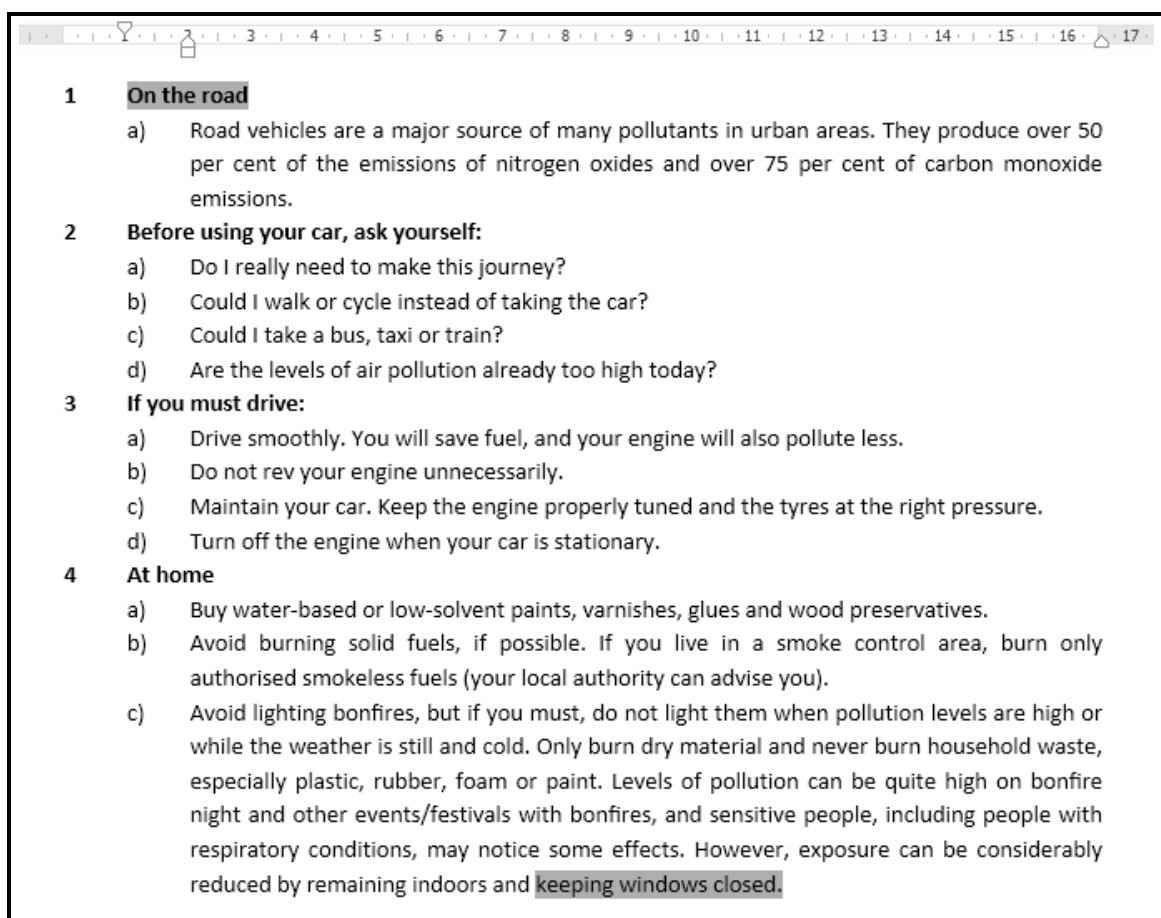
(7)

1.7   Change the UK Health Department source to a website source with the URL http://www.airquality.co.uk.   (2)

1.8   Add an automatic bibliography below the heading 'Bibliography' at the end of the document.   (1)

1.9   Insert the picture **1Clean** as a watermark to the document. Scale the watermark image to 150%.   (2)

1.10   Inspect the document for issues and remove all hidden text from the document.   (1)

Save and close the **1Health** document.   **[25]**

QUESTION 2: WORD PROCESSING

Open the **2Marine** word processing document and insert your examination number in the header or footer.

2.1   Change the font of the document title 'UNESCO: Marine Pollution' to Small caps.   (1)

2.2   Format the headings of the document so that you can insert a table of contents below the heading 'TABLE OF CONTENTS' to appear as shown below.

> TABLE OF CONTENTS
>
> Marine Pollution 2
>
>   What is polluting our Oceans?...2
>
>   How is this pollution threatening our Oceans? 2
>
>   How does this affect me? 3
>
> What can I do?..4
>
> What is IOC UNESCO doing? 4

(3)

2.3   Remove the automatic hyphenation from the document.   (1)

2.4   Insert a caption to the picture under the heading 'What is polluting our Oceans?'. The caption text can be found in the picture's alternative text.   (2)

2.5   Remove the hyperlink on the picture by Chris Deacutis.   (1)

2.6   Restore the picture below the heading 'What can I do?' to its original colour.   (1)

2.7   Find the text 'Question 2.6' below the heading 'What is IOC UNESCO doing?'.

        Replace the text 'Question 2.6' with a cross-reference to the IOC UNESCO picture and only display the page number.   (2)

2.8   Insert a footnote on the text 'UNEP', found on the last page of the document, as follows:

        • Set the footnote numbering format to A, B, C, …
        • Set the footnote numbering to restart on every page.
        • Add the footnote text 'Environment Programme'.   (4)

2.9   Insert a field below the text 'INSERT HERE' to display the number of words in the document.   (1)

2.10 Insert automatic page numbering in the footer of the document as follows:

- Use the Tildes format.
- Ensure that numbering does not appear on the cover page and Table of Contents page.
- Ensure that the number, '~1~,' appears on the page after the Table of Contents.
- Ensure that the page numbering continues on all the pages that follow. (4)

Save and close the **2Marine** document. **[20]**

QUESTION 3: SPREADSHEET

NOTE:

- Use formulae and/or functions for ALL calculations in the spreadsheet.
- Use absolute cell references ONLY where necessary to ensure that formulae are correct when you copy it to other cells in a spreadsheet.
- Insert formulae and/or functions in such a manner that the correct results will still be obtained even if changes are made to the existing data.
- Should you need to use building blocks, use the space allocated for this in the spreadsheet data file.

Open the **3Projects** spreadsheet which contains details of clean-up missions that started in 2019, including some projects planned for the future.

Work in the **Sheet1** worksheet.

3.1 Insert the **3Logo** picture, found in your examination folder, in **cell A1** so that it covers the entire cell. (2)

3.2 Fill **cell A3** to appear the same as **cell A2**. (1)

3.3 Rename the worksheet **Sheet1** to **Missions**. (1)

3.4 Use a COUNTIF function in **cell F3** to determine how many projects have a budget greater than R 55 000.00 (**column F**). (2)

3.5 The data in **column G** incorrectly displays values for recycling air pollution.

Apply a spreadsheet feature to **column G** to fill the cells with a colour of your choice whenever the targeted pollution (**column C**) is indicated as air pollution. (5)

3.6 A project is categorised as small, medium or large depending on the number of participants (**column D**) involved in the project.

Insert a suitable LOOKUP function in **cell J6** to determine the project category for the first project, based on the number of participants (**column D**) and the list in the **Categories** worksheet. (4)

3.7 The project coordinator will send notifications to prospective participants for projects that will start within the next 60 days (**column E**), inclusive of the current date.

Use a nested IF function/formula in **cell K6** to display the following messages:

- 'Notify' if a project will start within 60 days from the current date, OR
- '*' if the project starts after 60 days from the current date, OR
- 'Complete' if the project has been completed.

Apply the function/formula to the rest of **column K**. (6)

Save and close the **3Projects** spreadsheet. **[21]**

QUESTION 4: SPREADSHEET

NOTE:

- Use formulae and/or functions for ALL calculations in the spreadsheet.
- Use absolute cell references ONLY where necessary to ensure that formulae are correct when you copy it to other cells in a spreadsheet.
- Insert formulae and/or functions in such a manner that the correct results will still be obtained even if changes are made to the existing data.
- Should you need to use building blocks use, the space allocated for this in the spreadsheet data file.

The spreadsheet contains information about the air quality index (AQI) measured at various measuring stations in South Africa, as well as related health incidents from 2012 to 2019.

Open the **4Air** spreadsheet and work in the **Quality** worksheet.

4.1   Insert a function in **cell D3** to determine the second smallest air quality index (AQI) count per year (**column E**).   (3)

4.2   Add the option 'Urban' to the existing data validation rule in **cell B7** using the list in **cells J7:J8**.   (1)

4.3   The measuring station is given a risk rating (**column G**) depending on the AQI level in **column F**, e.g. an AQI level of L1 would display a risk rating of one exclamation mark (!).

Insert a combination of text functions in **cell G7** to display the number of exclamation marks (!) using the AQI level in **column F** and the data in **cell D4**.   (4)

4.4   Set the print area to **cells A6:H40**.   (1)

Work in the **Graph** worksheet.

4.5   Use a SUMIFS function in **cell H2** and the data in the **Quality** worksheet to determine the total number of health incidents of all the measuring stations in the Eastern Cape in 2018.   (5)

4.6   Create a graph/chart to appear as follows:

(5)
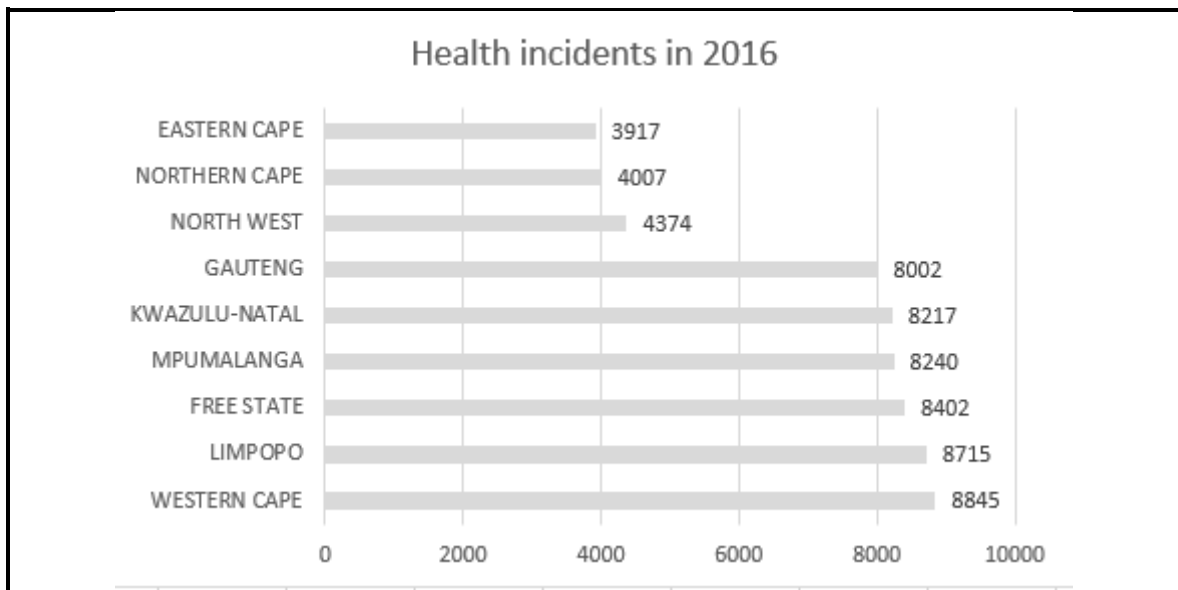
Save and close the **4Air** spreadsheet.   **[19]**

QUESTION 5: DATABASE

The municipality keeps track of companies contributing to the pollution problem. As part of the effort, they also investigated residents' recycling habits in terms of solving the pollution problem.

Open the **5Save** database.

5.1   Open the **tbl5_1** table in Design View and edit as follows:

      5.1.1   Change the field size of the *Coverage* field to Decimal.   (1)

      5.1.2   Insert a combo box for the *PollutionType* field with the values Air, Land and Water.   (2)

      5.1.3   Values entered for the *Level* field must range from 100 to 1 000.

             Insert a suitable validation rule to ensure that the data entered is valid.   (3)

      5.1.4   Insert a field called *Evidence* with a suitable data type so that documents/files with proof of actions can be included in this field.   (2)

      Save and close the **tbl5_1** table.

5.2   Modify the form called **frm5_2**, based on the **tblData** table, in Design View as follows:

- Change the heading in the form header to 'Survey'.
- Insert a date control in the form footer, so that only the date displays.
- Apply the Ion theme to the form.
- Change the format of the *YearBorn* field to Medium Date.

      Save and close the **frm5_2** form.   (5)

5.3   Open the query called **qry5_3**, based on the **tbl_Data** table, in Design View.

      Display the average number of drop-offs for each type of recycling activity. Ensure that the average will display an integer value.

      Save and close the **qry5_3** query.   (3)

5.4   Modify the **qry5_4** query, based on the **tbl_Data** table, in Design View.

- Display only the fields *Name*, *Surname*, *YearBorn, Knowledge*, *RecyclingActivity* and *DropOff*.
- Sort the query alphabetically by *Surname*.
- Display only the records where residents indicated that they have knowledge of recycling OR where the *RecyclingActivity* field has a value of 'Very active' AND a *DropOff* number of 15.

Save and close the **qry5_4** query.   (7)

5.5   Open the **qry5_5** query, based on the **tbl_Data** table, in Design View.

- Display only the records of people born after 1990.
- Insert a calculated field called *NewDrop* to calculate an increase of 10% in the number of times recyclables were dropped off (*DropOff*).

Save and close the **qry5_5** query.   (5)

5.6   Open the **rpt5_6** report, based on the **qry5_4** query, in Design View and change it to display as shown below. Use any background colour for the report header.

Rpt5_6					
Surname	Name	YearBorn	Knowledge	RecyclingActivity	DropOff
Activity	75				
Ally	Mohandas	1968-07-12	Yes	Active	5
Aubin	Joanna	1990-11-01	No	Active	1
Bailey	Heather	1972-03-02	No	Active	5
Ballon	Linda	1976-04-29	Yes	Active	4
Batiss	Pat	1992-08-26	Yes	Active	6
Bhengu	Melina	1981-10-03	No	Active	2
Bowlands	Jasmine	1971-12-22	No	Active	2
Bradbury	Henk	1970-09-29	No	Active	9
Branson	Nick	1987-04-22	No	Active	1
Breedt	Mike	1997-08-19	Yes	Active	1

(7)

Save and close the **rpt5_6** report.

Save and close the **5Save** database.   **[35]**

QUESTION 6: WEB DESIGN (HTML)

NOTE:

- **You may NOT use a word processing program such as Word to answer the HTML questions.**
- An HTML tag sheet has been attached for reference.
- All files needed to complete this question can be found in the examination folder.

A website was created to give more information about a possible future without pollution.

6.1   Open the incomplete **6_1Clean** file in a web browser and also in a text/HTML editor.

The Global Crisis of Plastic Pollution

Cleaning up the ocean will require an international agreement on par with the Paris climate accord.

Top three plastic pollution contributors:

	China	8.7
Tons per year	Indonesia	3.2
	Philippines	1.9

A young sperm whale, the largest toothed predator on Earth and an endangered species, washed up on the beach in south eastern Spain in February. Wanting to know what killed it, scientists brought the whale's 5 896 kg body to a lab for a necropsy. They sliced it open and were shocked when they discovered 29 kg of plastic in its stomach. This trash had caused the severe infection that took the whale's life.

Scientists across the globe are increasingly finding wildlife that has been killed after ingesting or becoming entangled in plastic. Ninety per cent of sea birds, for example, have been found to have plastic in their bellies. And the problem is only getting worse: The estimated 19 billion kg of plastic that ends up in the ocean every year is expected to double by 2025. These plastics will not only kill more animals; they will decimate coral reefs, and damage human health as micro plastics enter the food chain. They create more and larger dead zones where nothing can live, harm biodiversity and change ecosystems. There will likely be additional, unknown impacts; researchers have only been studying ocean plastics for less than two decades.

NOTE:

- Use the example on the previous page as a guide when answering this question.
- Question numbers appear as comments in the coding to indicate where you should insert the answer(s). DO NOT delete these comments.

6.1.1   Insert your examination number so that it displays in the tab of the browser.   (2)

6.1.2   Change the font colour of the heading 'The Global Crisis of Plastic Pollution' to red.   (1)

6.1.3   Modify the code so that the image displays.   (2)

6.1.4   Modify the table so that it displays as shown in the image of the web page on the previous page.   (3)

Save and close the **6_1Clean** file.

6.2   Open the incomplete **6_2Pollute** web file in a web browser and also in a text/HTML editor.

Complete the web page to look exactly like the example below.
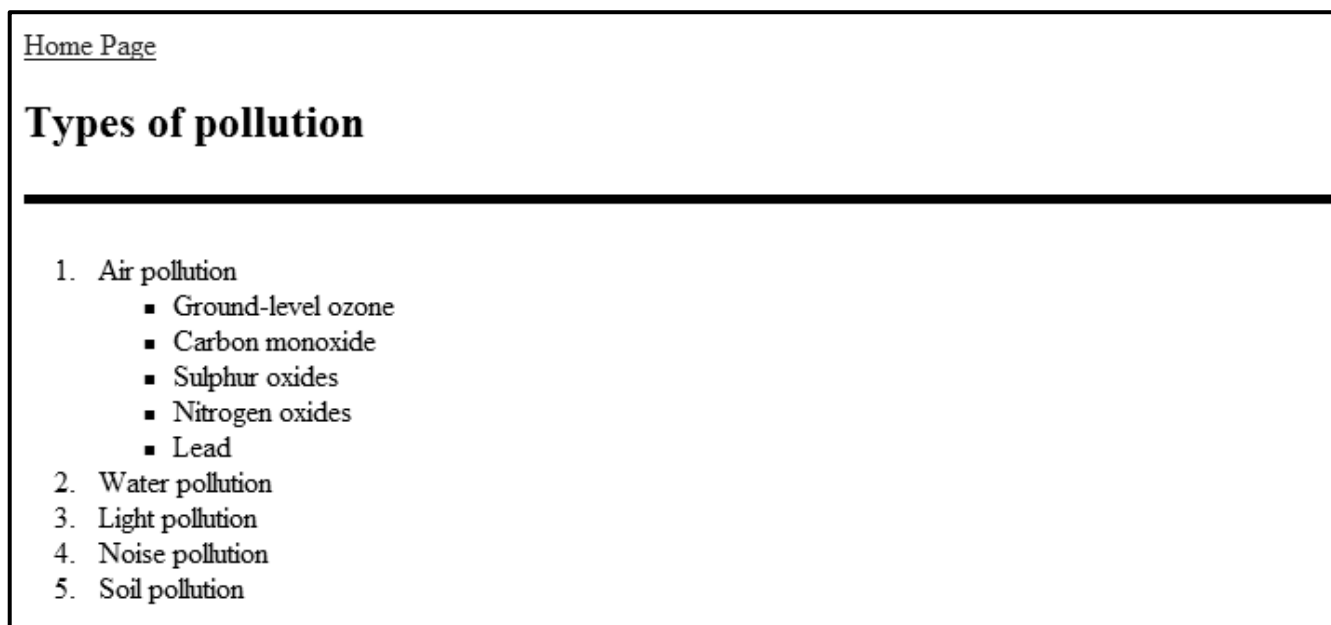
Save and close the **6_2Pollute** file.   (6)

ONE mark will be allocated for correctly closing tags <u>and</u> correctly nesting in both the files.   (1)

[15]

QUESTION 7: GENERAL

Pollution is a concern for many companies and the responsibility to control it rests with the management of the companies.

7.1   After monitoring the pollution in a specific area, a letter must be prepared for the companies with a concerning pollution history.

Open the **7Letter** document to be used for a mail merge.

7.1.1   Change the form controls in the letter as follows:

- Change the form field control below the text 'Date:' to display the current date.
- Add the option '14' in the drop-down form field control next to the text 'Reply required within:'.

Save the **7Letter** document, but do NOT close it.   (2)

7.1.2   Prepare the mail merge as follows:

- Link the **7Letter** document with the data source, the **7Company** spreadsheet.
- Select only the companies that have a 'high' and 'very high' level.
- Replace the text '<Company>' and '<Level>' to display the 'company' and 'level' from the **7Company** spreadsheet.

Save the **7Letter** document, but do NOT close it.

Complete the mail merge and save the merged document as **7Merge**.   (6)

Close the **7Letter** document.

The Pollution Control Board will give certificates to companies with a consistently low level of pollution. The certificates will be presented in the month corresponding with the monitor date.

Open the **7Date** spreadsheet.

Work in the **Monthly** worksheet.

7.2   Complete the function/formula in **cell D3** to display the name of the companies that have a low level (**column B**) of pollution and where the monitor date (**column C**) was in November.   (3)

Work in the **7.3** worksheet.

7.3   Display an alphabetical list of names of all the companies with a 'Very high' level
        of pollution and where the monitor date was in 2021.   (3)

        Save and close the **7Date** spreadsheet.

7.4   Extract the image file from the password-protected folder called **7Picture** using
        the password 'November'.   (1)

                                                                                          [15]

                                                          TOTAL: **150**

HTML TAG SHEET

Basic Tags	
Tag	**Description**
<body></body>	Defines the body of the web page
<body bgcolor="pink">	Sets the background colour of the web page
<body text="black">	Sets the colour of the body text
<head></head>	Contains information about the web page
<html></html>	Creates an HTML document – starts and ends a web page
<title></title>	Defines a title for the web page

	Inserts a line break
<!-- -->	Comment

Text Tags	
Tag	**Description**
<hl></hl>	Creates the largest heading
<h6></h6>	Creates the smallest heading
	Creates bold text
<i></i>	Creates italic text
<u></u>	Creates underlined text
	Sets size of font, from "1" to "7"
 	Sets font colour
	Sets font type

Links Tags	
Tag	**Description**
	Creates a hyperlink
<img src="name">	Creates an image link
	Creates a target location in the document
	Links to a target location created somewhere else in the document
	Links to an e-mail address

Formatting Tags	
Tag	**Description**
<p></p>	Creates a new paragraph
<p align="left">	Aligns a paragraph to the "left" (default), can also be "right" or "center"
	Creates a numbered list
<ol type="A","a", "I","i","1">	Defines the type of numbering used
	Creates a bulleted list
<ul type="disc", "square","circle"> 	Defines the type of bullets used

Formatting Tags continued	
Tag	**Description**
	Inserted before each list item, and adds a number or symbol depending on the type of list selected
<img src="name">	Adds an image
<img src="name" align="left">	Aligns an image: can be "right", "bottom", "top"
<p align="center"><img src="name"></p>	Aligns an image in the "center", can also be "middle"
<img src="name" border="1">	Sets the size of the border around an image
<img src="name" width="200" height ="200">	Sets the height and width of an image
<img src="name" alt="alternative text">	Displays alternative text when the mouse hovers over the image or when the image is not found
<hr/>	Inserts a horizontal line
<hr size="3"/>	Sets size (height) of a line
<hr width="80%"/>	Sets the width of a line, in percentage or absolute value
<hr color= "ff0000"/>	Sets the colour of the line

Table Tags	
Tag	**Description**
<table></table>	Creates a table
<tr></tr>	Creates a row in a table
<td></td>	Creates a cell in a table
<th></th>	Creates a table header (a cell with bold, centred text)
<table width="50">	Sets the width of the table
<table border="1">	Sets the width of the border around the table cells
<table cellspacing="1">	Sets the space between the table cells
<table cellpadding="1">	Sets the space between a cell border and its contents
<tr align="left">	Sets the alignment for cell(s) ("left", can also be "center" or "right")
<tr valign="top">	Sets the vertical alignment for cell(s) ("top", can also be "middle" or "bottom")
<td colspan="2">	Sets the number of columns a cell should span
<td rowspan="4">	Sets the number of rows a cell should span

INPUT MASK CHARACTER SHEET

CHARACTER	DESCRIPTION
0	Digit (0 to 9, entry required, plus [+] and minus [–] signs not allowed)
9	Digit or space (entry not required, plus [+] and minus [–] signs not allowed)
#	Digit or space (entry not required; spaces are displayed as blanks while in Edit mode, but blanks are removed when data is saved; plus [+] and minus [–] signs allowed)
L	Letter (A to Z, entry required)
?	Letter (A to Z, entry optional)
A	Letter or digit (entry required)
a	Letter or digit (entry optional)
&	Any character or a space (entry required)
C	Any character or a space (entry optional)
. , : ; - /	Decimal placeholder and thousand, date and time separators (The actual character used depends on the settings in the **Regional Settings Properties** dialog box in the Windows Control Panel.)
<	Causes all characters to be converted to lower case
>	Causes all characters to be converted to upper case
!	Causes the input mask to display from right to left, rather than from left to right. Characters typed into the mask always fill it from left to right. You can include the exclamation mark anywhere in the input mask.
\	Causes the character that follows to be displayed as the literal character (e.g. \A is displayed as just A)

YOU MAY USE THIS PAGE FOR ANY PLANNING PURPOSES.

YOU MAY USE THIS PAGE FOR ANY PLANNING PURPOSES.

<table>
<tr><td>Examination sticker</td><td>150</td></tr>
</table>

COMPUTER APPLICATIONS TECHNOLOGY P1 – NOVEMBER 2021

INFORMATION SHEET *(to be completed by the candidate AFTER the 3-hour session)*

CENTRE NUMBER_____

EXAMINATION NUMBER_____

WORK STATION NUMBER _____

SUITE USED (Mark appropriate box with a cross (**X**))	Microsoft Office 2013	Microsoft Office 2016	Microsoft Office 2019	Office 365	
WEB BROWSER USED (Mark appropriate box with a cross (**X**))	Mozilla Firefox	Google Chrome	Internet Explorer	Microsoft Edge	Other (Specify)

FOLDER NAME _____

Candidate must enter the file name(s) for each answer. Tick if saved and/or attempted.

Question Number	File name	Saved (✓)	Attempted (✓)	Maximum Mark	Mark Achieved	Marker Initial/ Code
1	1Health			**25**		
2	2Marine			**20**		
3	3Projects			**21**		
4	4Air			**19**		
5	5Save			**35**		
6	6_1Clean			**15**		
	6_2Pollute					
7	7Letter			**15**		
	7Merge					
	7Date					
	7Picture					
TOTAL				**150**		

Comment *(For office/marker use only)*

_____

_____