basic education

Department:
Basic Education
**REPUBLIC OF SOUTH AFRICA**

**NATIONAL
SENIOR CERTIFICATE**

**GRADE 12**

**COMPUTER APPLICATIONS TECHNOLOGY P1**

**NOVEMBER 2012**

**MARKS: 200**

**TIME: 3 hours**

**This question paper consists of 18 pages and a separate information sheet.**

## INSTRUCTIONS AND INFORMATION

1. Owing to the nature of this three-hour examination, it is important to note that you will NOT be permitted to leave the examination room before the end of the examination period.

2. Insert your examination number in the header of EVERY document that you create or save.

3. The invigilator will give you a disk containing all the files needed for the examination OR you will be told where the files can be found on the network or computer. If a disk has been issued to you, you must write your examination number and centre number on the disk. If you are working on the network, you must follow the instructions provided by the invigilator.

4. 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.

5. This question paper consists of SEVEN questions.

6. Answer ALL the questions.

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

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

9. At the end of the examination you must hand in the disk given to you by the invigilator with ALL your answer files saved onto the disk, OR you should make sure that ALL your answer files are saved on the network/computer as explained to you by the invigilator/educator. Make absolutely sure that all files can be read. Do NOT save unnecessary files/folders and do NOT hand in duplicate answer files/folders.

10. The separate 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.

11. During the examination you may use the help functions of the programs which you are using. You may NOT use any other resource material.

12. If data is derived from a previous question that you cannot answer, you should still proceed with the questions that follow.

13. Unless instructed otherwise, formulae and/or functions must be used for ALL calculations in questions involving spreadsheets. Absolute cell references must be used only where necessary to ensure that formulae are correct when they are copied to other cells in a spreadsheet.

14. In all questions involving word processing, the language should be set to English (South Africa). The paper size is assumed to be A4 Portrait, unless instructed otherwise.

15. Use centimetres as the unit of measurement when answering this examination paper.

16. Generally 1 mark is allocated per action, so a 2-mark question would usually require TWO actions, et cetera.

17. The examination folder/data disk that you receive with this question paper will contain the folder and files listed below. Ensure that you have the folder and all the files before you begin this examination.

| A folder called **Data** that contains the following files: | |
|---|---|
| • 1Climate_Klimaat | Word processing file |
| • 2Wind_Wind | Word processing file |
| • 3Travel_Reis | Spreadsheet file |
| • 4Daily_Daagliks | Spreadsheet file |
| • 5Weather_Weer | Database file |
| • 6Day_Dag | Spreadsheet file |
| • 6Record_Opname | Word processing file |
| • 7Answers_Antwoorde | Word processing file |
| • 7Extreme_Uiters | Word processing file |
| • 7Flood_Vloed | Word processing file |
| • 7Password_Wagwoord | Word processing file |
| • 7Storm_Storm | Word processing file |

**SCENARIO**

Weather patterns are changing. Your school's weather club offers the following services:

• Providing information about extreme weather conditions

• Maintaining a spreadsheet on local weather data

• Creating and maintaining a database containing weather data for people travelling abroad

**QUESTION 1**

Open the **1Climate_Klimaat** document.
[Adapted from www.climate.org/topics/extreme-weather]

1.1     Set the right-hand margin of the document to 1.5 cm.                                    (1)

1.2     Change the layout of the document as follows:

- Apply automatic hyphenation to the whole document.
- Justify the text.                                                                             (2)

1.3     Place a 3 pt wide, double-line page border around all the pages of the document.         (3)

1.4     Apply the following changes to the heading 'Climate Institute' as shown in the example on the next page.

The heading ...

- appears in WordArt/Fontworks.
- is 23 cm wide.
- reads vertically from bottom to top.
- is on the left-hand side of the page.
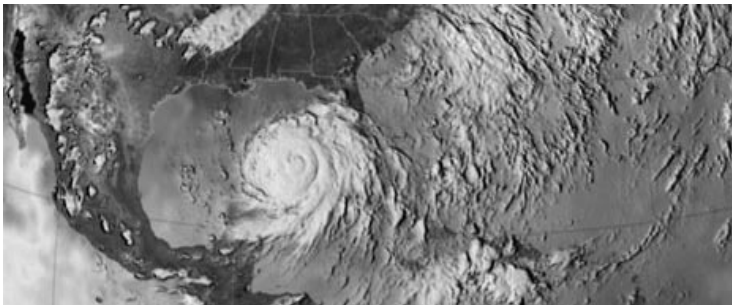- does not hide the text.                                                                       (5)

**EXTREME WEATHER**

Most of the potentially damaging consequences relating to climate change are associated with extremes – the number of heat waves, floods or severe storms, for example. Since extreme weather events cause loss of life and property, it is important to understand what impact climate change may have on their occurrence.

Global climate change affects different regions of the earth in different ways. Although the accuracy of regional climate forecasts is improving, they are still uncertain. However, we do know that a warmer atmosphere will result in a greater number of tropical storms, extreme heat waves, droughts and floods.

**Figure 1: Weather pattern**

1.5      Change all subheadings which are formatted with Heading 1 style to Heading 2 style.       (2)

1.6      Apply paragraph spacing of 10 pt after/0.35 cm below to the first paragraph starting with 'Most of the ...'.       (1)

1.7      Change the properties of the image on page 1 so that it appears in colour.       (1)

1.8      Change the caption 'Figure 2: Storm', that appears below the graph/chart on the last page of the document so that it just reads 'Storm' and appears above the graph/chart.       (2)

1.9      Set the distance from the text of the dropped capital letter 'S' of 'Since' on the second page to zero.       (1)

1.10      The text from 'Tropical Storms ...' to '... global climate change' at the end of the document must be placed in columns as follows:

- The text must appear in two columns.
- The first column must be set to 5.5 cm wide.
- A vertical line must appear between the columns from the heading 'Heat Waves' to the end of the document.
- Ensure that the heading 'Heat Waves' will always appear at the top of a new column.       (5)

1.11    Move the graph/chart and its caption that appear at the end of the document to the second page as follows:

- The picture/image position of the graph/chart must be set to allow the graph/chart to appear exactly in the centre of the page (both vertically and horizontally).

- The image must appear across the two columns of text.

- The text must flow around the image.                                             (4)

1.12    Replace all occurrences of the word 'storms' so that the words appear in a red font, and are no longer underlined.

**NOTE:**  Do NOT specify any formatting of the text for which you are searching.                                                                                          (3)

1.13    Insert a diagonal text watermark in Arial font to read 'Weather_Weer'.          (3)

Save **1Climate_Klimaat** and close the document.                                 **[33]**

**QUESTION 2**

2.1     Add your examination number to the author property of the document **2Wind_Wind**.                                                                     (1)

Open the **2Wind_Wind** document.

2.2     Replace the words linked to the bookmark BoyGirl with the word 'gender' without deleting the bookmark.                                               (2)

2.3     Indent the names of the storms starting with 'Alex (male) ...' to '... and so on ...' by 1 cm.                                                          (2)

2.4     Correct the spelling error found in the document.

        **NOTE:**   The names of places, towns and hurricanes are NOT misspelt.     (1)

2.5     Locate the subheading 'Tornado versus hurricane' together with its contents ending '... 320 km/h.'

        Place a dashed shadow paragraph border around the subheading and its contents.                                                                       (3)

2.6     Apply 14 pt bullets to the text beginning with 'Be sure ...' and ending with '... on it.'

        Use the lightning cloud symbol 🗲 in Webdings (character number 43) (LibreOffice:  U+F02B) for the bullet symbols.                               (3)

2.7     Convert the table that contains 'Categories of Hurricanes' to text.         (1)

Study the table below before attempting QUESTION 2.8.

| | HURRICANE | YEAR | STATE(S) HIT | CATEGORY | DEATH TOLL |
|---|---|---|---|---|---|
| 3 | Hurricane Katrina | 2005 | Louisiana, Mississippi, Texas, Alabama | 3 | 1833 |
| 2 | Lake Okeechobee Hurricane | 1928 | Florida | 4 | 2500 |
| 1 | Great Galveston Hurricane | 1900 | Texas | 4 | 8000 |
| 5 | Sea Islands | 1893 | South Carolina, Georgia | 3 | 1000 |
| 4 | Cheniere Caminanda | 1893 | Louisiana | 4 | 1100 |
| | | | | TOTAL | 14433 |

2.8    Locate the two tables under the heading 'The Five Worst Hurricanes in US History' and make the following changes:

      2.8.1    Convert the text in the first table to upper case.                    (1)

      2.8.2    Merge the two tables without deleting any data.

              **NOTE:**  If you did NOT complete QUESTION 2.8.2, continue to apply the instructions in QUESTIONS 2.8.3 to 2.8.8 to the second table only.                    (1)

      2.8.3    Set the outside border of the table to 6 pt and ensure that the inside gridlines remain at ½ pt.                    (2)

      2.8.4    Set the height of all the rows in the table to exactly 1 cm.                    (2)

      2.8.5    Vertically align the cell contents of the table to the centre.                    (1)

      2.8.6    Select all the cells in the bottom row of the table EXCEPT the cell containing <<Formula>>, and:

- Merge these cells.
- Right-align the text 'TOTAL'.                    (2)

      2.8.7    Replace the text <<Formula>> with a formula to calculate the total number of deaths.                    (1)

      2.8.8    Sort the data in the table by year from the most recent to the first time a hurricane was listed.                    (2)

2.9    Apply outline numbering to the THREE trivia questions to appear as shown below:

| Trivia Questions |
| --- |
| 1.        Which of these hurricanes had the strongest winds?<br>      a.      Sea Islands Hurricane in 1893<br>      b.      Hurricane Katrina in 2005<br>      c.      Lake Okeechobee Hurricane in 1928<br><br>2.        What would you observe in the eye of the hurricane?<br>      a.      Strong, spinning winds<br>      b.      Calm or very little wind<br>      c.      Heavy rain, thunder and lightning |

(3)

2.10    Add automatic page numbering to the document as follows:

- The page number must appear anywhere in the footer.
- The first page of the document is NOT numbered.  In other words, page numbering starts on the second page and is numbered as 1.                    (4)

Save **2Wind_Wind** and close the document.                    **[32]**

**QUESTION 3**

Weather data for the past 10 years (2002–2011) for the cities of Cape Town, Durban and Johannesburg has been collected and stored in a spreadsheet.

Open the spreadsheet **3Travel_Reis**.

Work in the worksheet **Cities_Stede**.

3.1     Change the heading 'Cape Town/Kaapstad' in the merged **cell A2:H2** to resemble the example below:

```
┌─────────────────────────────┐
│         Cape Town           │
│         Kaapstad            │
└─────────────────────────────┘
```
                                                                                      (2)

3.2     Add a function in **cell L15** to calculate the average yearly rainfall in Johannesburg from 2002 to 2011.                                                    (2)

3.3     The wind speed in Cape Town seems to be more or less the same from year to year.

        Add a function in **cell D18** that will determine the most commonly occurring value for the annual average wind speed in Cape Town (**Column D**).          (2)

3.4     Add a function in **cell S18** to determine the maximum yearly rainfall in Durban from 2002 to 2011.                                                         (2)

3.5     **Columns G**, **N** and **U** contain values showing the number of days with snow per year in each of the three cities.

        Add a function or formula in **cell F21** to display the total number of days on which snow fell in all three cities from 2002 to 2011.                      (3)
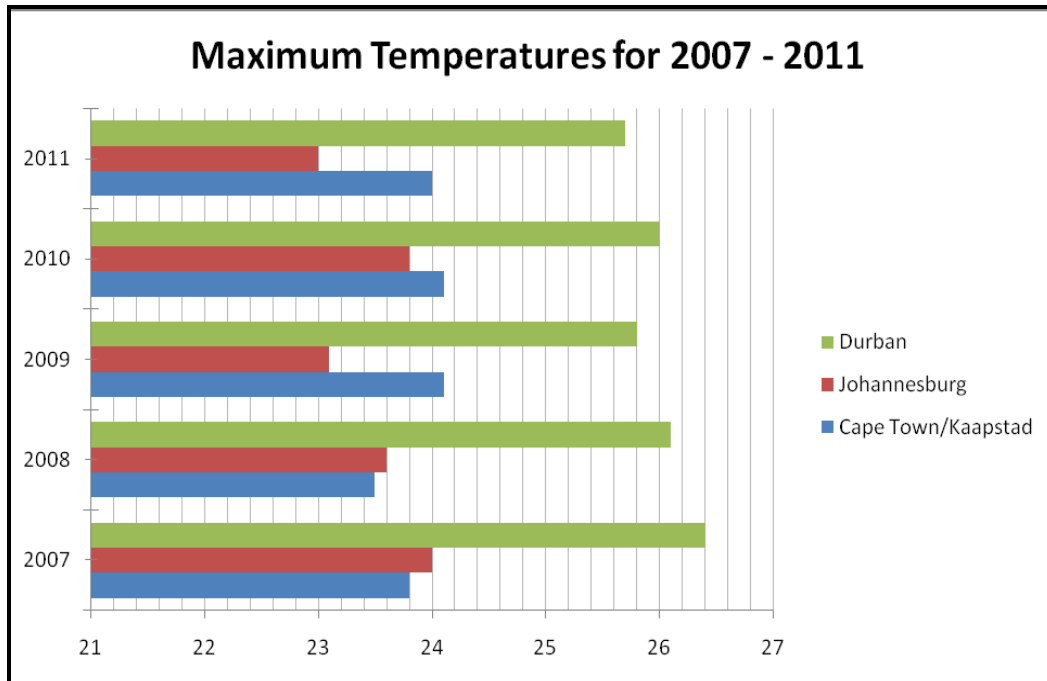
3.6     Use conditional formatting in **column O** to add a blue fill to the three cells containing the three highest values in that column. This conditional formatting must show the top three if applied to any other set of data.                   (3)

Work in the worksheet **Graph_Grafiek**.

3.7     A pie chart/graph is given. Change the given chart/graph to resemble the chart/graph below.



Change only the following:

- Chart/Graph type
- Title of the chart/graph
- Display the legend to the right of the chart/graph, as shown above
- Display the minor vertical gridlines
- Ticks (marks) should cross the vertical axis           (5)

3.8     Make the following changes to the header of the worksheet (**Graph_Grafiek**):

- The text 'Temperatures' is displayed in the left-hand section of the header.
- The current date (which must update) is displayed in the centre section of the header.
- The text 'Page number' plus an automatic page number is added to the right-hand section of the header, for example Page number 1.           (3)

Save **3Travel_Reis**.

A summary of the weather data gives valuable information.

Continue working in the spreadsheet **3Travel_Reis**.

Work in the worksheet called **Summary_Opsomming**.

3.9    Change the height of the first row to 80 pt/2.82 cm.    (1)

3.10   Insert a double-line border to the bottom of the merged **cells A1:D1**.    (2)

3.11   Add a function in **cell D3** to display the average annual maximum temperature for Durban (2002–2011) using data from the **Cities_Stede** worksheet.    (2)

3.12   Use IF-statements in **cell B8** to add a classification for Johannesburg.

This is based on the difference between the average maximum and average minimum temperatures of each of the cities in this worksheet, as follows:

| Difference between average maximum and average minimum temperatures | Classification |
|---|---|
| Less than 10 | Constant |
| Greater than or equal to 10 but less than 13 | Settled |
| 13 or greater than 13 | Extreme |

(4)

3.13   The average number of rainy days per year in each of the cities as observed from 2002 to 2011 is shown in **row 5**.

Add a function in **cell B9** to calculate the percentage chance you may have of experiencing a rainy day in Johannesburg.  The answer must be rounded up to the nearest whole number.    (3)

3.14   Insert a column graph in the worksheet **Summary_Opsomming** to compare the basic climate values of the three cities in **cells B2:D7**.

   **NOTE:**   • Format the column indicating the greatest number of rainy days. Use a gradient fill in a dark colour to emphasise this column (that is to make it stand out).

   • The title 'Basic Climate Comparison' must appear above the graph.    (6)

Save and close **3Travel_Reis**.    **[40]**

QUESTION 4

Weather data for several South African towns and cities has been collected for 7 December 2011.

Open the spreadsheet **4Daily_Daagliks**.

Work in the worksheet **DayRecord_DagVerslag**.

4.1    Add a function in **cell N2** to determine the number of towns for which wind data exists in **column J**. (2)

4.2    In **cell E5**, display the difference between the minimum temperature in **cell C5** and the maximum temperature in **cell D5**.

Show the difference as a percentage of the minimum temperature. (3)

4.3    The daily temperatures for Bhisho for one week are recorded in **cells B4:H4** in the **Temperature_Temperatuur** worksheet.

Add a function in **cell F5** on the **DayRecord_DagVerslag** worksheet to display the average temperature for Bhisho for ONE week.

Round the answer off to TWO decimal places. (4)

4.4    A day is considered hot if the humidity (**column G**) is higher than 80%.

Use a function in **cell H5** to display 'Hot' if the humidity level is 80% and above and 'Mild' if the humidity level is less than 80%. (3)

4.5    Use a VLOOKUP function in **cell K5** to display the wind speed for Bhisho on Thursday. Use the data in the worksheet **Wind_Wind** as lookup values.

Make sure that the function will work correctly if it were to be copied down for the other towns and cities. (5)

4.6    Each town is given a code (see **column L**), made up as follows:

- An asterisk (*) followed by the abbreviation of the name of the province found in **column B**, followed by the first three letters of the name of the town.
- The code must appear in upper case.

Add a function or formula in **cell L5** to generate a code for Bhisho. (6)

4.7    Use a function in **cell N3** to display the number of days on which there was wind for ALL towns and cities during the week listed in **cells B4:H10** in the **Wind_Wind** worksheet. (3)

Save and close **4Daily_Daagliks**.                                            **[26]**

**QUESTION 5**

Open the **5Weather_Weer** database.

Work in the **Data_Data** table.

5.1     The club wishes to maintain databases concerning the weather.

        5.1.1     Change the data type of the *Experience_Ondervinding* field to a more
                  suitable field type.                                                                    (1)

        5.1.2     Delete the record of L Jackson.                                                         (1)

        5.1.3     Add a drop-down list control to the *Gender_Geslag* field which will
                  allow the user to choose 'M' or 'F'.                                                    (3)

        5.1.4     Set a validation rule and appropriate (suitable) validation message on
                  the *Departure_Vertrek* field so that the dates of departure are from
                  1 October 2011 to 31 December 2012 only.                                               (4)

5.2     The queries below are based on the database table called **Info_Inlig** in the
        same database. The Design View of the table shows the following fields:

| Field Name | Data Type | Description |
| --- | --- | --- |
| ID | AutoNumber | |
| Surname_Van | Text | Surname of traveller/Van van reisiger |
| Initial_Voorletter | Text | Initial of traveller/Voorletter van reisiger |
| Gender_Geslag | Text | Gender/Geslag |
| ContactName_Kontaknaam | Text | Contact person/Kontakpersoon |
| ContactNumber_Kontaknommer | Text | Emergency number/Nommer vir noodgeval |
| Departure_Vertrek | Date/Time | Date of departure/Vertrekdatum |
| Arrival_Aankoms | Date/Time | Date of return/Terugkeerdatum |
| Country_Land | Text | Destination/Bestemming |
| Danger_Gevaar | Text | Climate concerns/Klimaatsbekommernisse |

        •   Open the query **QryMale_Manlik**.

        •   Modify the **QryMale_Manlik** query to show only the surnames and initials of
            the male travellers.

        •   Display the information in ascending order of their date of departure.               (3)

Save and close the **QryMale_Manlik** query.

Open the query **QryDays_Dae**.

5.3    Modify the **QryDays_Dae** query by inserting a calculated field called
       *Days_Dae* to display the number of days the travellers will be out of the
       country.                                                                        (4)

Save and close the **QryDays_Dae** query.

5.4    Create a new query called **QryFlood** based on the data in the **Info_Inlig** table.

       It must display the following:

       • A list of the initials and surnames of the travellers, as well as the destination
         country (no other fields should be displayed)
       • Only the records for those destinations (countries) where flooding may be a
         danger (see *Danger_Gevaar* field)                                            (4)

Save the query as **QryFlood**.

5.5    Export the results from the **QryInfo_Inlig** query to a spreadsheet and save it as
       *MyInfo*.                                                                        (2)

5.6    Create a form called **New_Nuut** based on the **Data_Data** table to allow users
       to enter new data into the table.                                               (3)

5.7    Open the existing form called **FrmForm_Vorm**.

       5.7.1    Make the following changes to the form header:

                • Create a label in the form header and type in your examination
                  number.
                • Move the image from the form footer to the form header.
                • Place a shadowed border around the image.                            (4)

       5.7.2    Make the following changes to the form footer:

                • Place a horizontal line at the top of the form footer.
                • Add today's date as a field in the form footer.                      (3)

Save and close both forms.

5.8      Create a report called *MyReport_Verslag* based on the **Info_Inlig** table as follows:

- Display ALL the fields.
- Group the records in the report according to the *Country_Land* field.
- Sort the records in the report according to the *Surname_Van* field.
- Use a block layout.      (4)

Save and close the report.

5.9      Open the existing report called **RepInfo_Inlig**.

Modify the report as follows:

- Use a function to display the number of records for each group of departures below the *Departure_Vertrek* group.
- Add page numbering to the report so that the page number appears on every page. Page numbers should appear in the format Page X of Y, for example Page 1 of 2.      (5)

Save and close the report.

Close the database **5Weather_Weer**.      **[41]**

**QUESTION 6**

Learners need to present the data from the weather station to the authorities.

Open the **6Record_Opname** document.

6.1     Change the page orientation of the document to landscape.                    (1)

6.2     Study the example below to answer QUESTIONS 6.2.1 and 6.2.2:

☼ Daily Record of Weather Conditions

6.2.1     Change the title 'Daily record of weather conditions' as follows:

• An outline font style
• A small caps/small capitals effect                    (2)

6.2.2     Insert a symbol resembling a sun to the left of the title.

Adjust the size of the symbol to resemble the sample above.     (3)

6.3     Set and apply a right-aligned leader tab at 10 cm for the recorder's name.     (3)

6.4     The weather station is identified by the number 3674.

Add an endnote to the words 'weather station no 3674'.

• Use the 'info' symbol ⓘ, found in the Webdings character set, as a custom
  mark to mark the endnote.
• The words 'GPS pending' appear as the endnote text.                    (3)

6.5     Place a text form control next to the word 'Name' with the following properties:

• The default text is 'Enter the name here'.
• A name entered in the text control may NOT be longer than 20 characters.     (3)

6.6     Place a field showing the file name and path for **6Record_Opname** at the
        bottom of the page.                                                         (1)

6.7     Weather data has been entered into a spreadsheet called **6Day_Dag**.

Paste the contents of **cells B2:G9** as a linked table at the end of the document
**6Record_Opname**.                                                               (2)

6.8 Extract the names of the 10 cities that are most likely to experience flooding according to the article in the **1Climate_Klimaat** document.

Display the names of these cities in the **6Record_Opname** document in an easily readable format.

**HINT:** Use the keywords 'Mumbai, Shanghai' to locate the appropriate data. (2)

6.9 Place a link on the image of the windy tree to open the word processing file **2Wind_Wind**. (2)

Save and close all open documents. **[22]**

## QUESTION 7

Open the word processing file **7Answers_Antwoorde**.

7.1 Enter the number of characters found in the word processing file **7Extreme_Uiters** in the space provided in the **7Answer_Antwoorde** document. Include ALL characters in the count. (1)

7.2 On which template was the word processing file **7Flood_Vloed** based?

Enter your answer in the space provided in the file **7Answer_Antwoord**. (1)

7.3 Use the password '8' to open the file **7Password_Wagwoord**.

Remove the password from the file and close **7Password_Wagwoord**. (1)

7.4 How much space would you need to save **7Extreme_Uiters** on a disk?

Enter your answer in the space provided in the file **7Answer_Antwoord**. (1)

7.5 Save the image found in the word processing file **7Storm_Storm** as an image file.

Name the image file **7Storm**. (2)

Save and close all open documents. **[6]**

**TOTAL:** **200**