**COMPUTER APPLICATIONS TECHNOLOGY: PAPER I**

Time: 3 hours                                                                                      180 marks

**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY**

1. This question paper consists of 14 pages and an insert (HTML Tag List and Input Mask Character Sheet) of 2 pages (i–ii). Please check that your question paper is complete.

2. The exam consists of 5 sections and 7 questions. All questions in all sections must be answered.

3. You must use a text editor for the HTML section. Acceptable applications are Notepad, Notepad++ or WordPad.

4. Please read the entire question before attempting a solution.

5. Do not do more than is required by the question.

6. Use functions and/or formulas to calculate answers, unless otherwise instructed.

7. Take note of the mark allocation to ascertain the complexity of the solution required and the amount of time you should spend on each question.

8. Save your work regularly.

9. If you are unable to get a formula/function to work correctly: open the **Student_Screenshots** document; indicate the question number; paste a screenshot showing the issue and provide a brief explanation to obtain part marks; you may then leave it out of the spreadsheet or database solution.

10. Unless other instructions are given, all word-processing documents should be set up as follows:

    - The default for measuring units – centimetres (cm)
    - Language – English (South Africa)
    - Page size – A4
    - Margins – 2,54 cm

11. You may use the offline help function, if available, in each application.

12. Figures in the question paper have a border. When a figure is provided as part of a question, you are not expected to add the border unless specifically instructed to do so.

13. Before you begin, rename your data folder to your examination number.

14. The folder named **Backup_Data_Files** contains *copies* of all the data files. Use this folder to get a clean copy of an original file if you need to re-do a particular question. DO NOT save your work inside this folder.

**The contents of your exam *Data Files* folder and sub-folders are as follows:**

| *Data Files* | *Question1* | *Question2* |
|---|---|---|
| 📁 Backup_Data_Files<br>📁 Question1<br>📁 Question2<br>📁 Question3<br>📁 Question4<br>📁 Question5<br>📁 Question6<br>📁 Question7<br>📄 Student_Screenshots.docx | 🖼 Mars.gif<br>📄 MarsFacts.txt<br>🌐 MarsPlanet.svg<br>🖼 Marsweb.jpg<br>📄 NeverBeenToMars.mp3<br>📄 Q1_Answers.docx<br>📦 Q1Articles.zip<br>📄 Q1MIP.docx<br>🖼 rocketship.png<br>📄 The Trouble With Mars.pptx | 📄 Q2_Colonization of Mars.docx<br>🖼 rocketship.png<br>🖼 Rover.jpg<br>📄 Sources.txt |

| *Question3* | *Question4* | *Question5* |
|---|---|---|
| 📄 MarsFacts.txt<br>📄 Q3_Mars Information Pack.docx | 📄 Q4_Applicants.xlsx | 📄 Q5_ApplicantInterests.xlsx<br>📄 Q5_Interviews.xlsm |

| *Question6* | *Question7* | *Question7*<br>*(images subfolder)* |
|---|---|---|
| 📄 ExtraApplicants.xlsx<br>📄 Q6_MarsEntries.accdb | 📁 images<br>🌐 index.html | 🖼 Mars.gif<br>🖼 rocketship.png |

| *Backup_Data_Files* | | |
|---|---|---|
| 📁 Question1_BackupFiles<br>📁 Question2_BackupFiles<br>📁 Question3_BackupFiles<br>📁 Question4_BackupFiles<br>📁 Question5_BackupFiles<br>📁 Question6_BackupFiles<br>📁 Question7_BackupFiles | | |

Make sure to check each folder and ensure that every file/document/folder is accessible.

**Contextual Scenario**

*2Mars* is a project inviting people, who want to be among the first humans to live on Mars, to take part in a special preparation and training programme. An advert was placed for applicants to apply to be part of the programme, called **Mars2030**.

The response was overwhelming. In the first week, 500 people signed up. The programme involves developing applicants' knowledge of Mars, ascertaining their physical eligibility and ensuring that all their important details have been correctly captured for processing.

**SECTION A**               **FILE AND FOLDER MANAGEMENT**

**QUESTION 1**

Open and work only in the folder named *Question1*.

1.1     Enable file name extensions, if not already enabled.

      1.1.1    Take a screenshot showing the File Explorer ribbon, indicating that file name extensions have been enabled.                                                     (1)

      1.1.2    Insert the screenshot in the document **Q1_Answers**.                        (1)

      1.1.3    Crop the image, showing only the relevant information in the ribbon.     (1)

1.2     Sort all items in the *Question1* folder according to file size, in ascending order. Insert a screenshot in the **Q1_Answers** document showing all column headings and all sorted files.                                                        (2)

1.3     Who is the album artist of the audio file **NeverBeenToMars.mp3**? Type your answer in the **Q1_Answers** document.                                          (1)

1.4     What is the file size of the **Q1MIP.docx** file, in MB? Type your answer in the **Q1_Answers** document.                                                            (1)

1.5     In the **Q1_Answers** document, write or paste the full computer path to the *Question1* folder. You may then close the **Q1_Answers** document.          (1)

1.6     Create a subfolder called *Images* in the *Question1* folder.                  (1)

1.7     Move all the image files into the newly created *Images* subfolder.        (2)

1.8     Extract/Unzip the file **Q1Articles.zip** into its own default folder. Ensure the unzipped folder is in the *Question1* folder.                                    (1)

1.9     Delete the **Q1Articles.zip** file after extracting the files from it.          (1)

1.10    Zip/Compress the file **Q1MIP.docx** to **Q1MIP.zip**.                          (1)

1.11    Create a shortcut, appearing in the *Question1* folder, to the **Q1_Answers** file.                                                                                                    (1)

1.12    Rename the shortcut (created in Question 1.11) to **Answers_Doc**.        (1)

1.13    Ensure that the PowerPoint file is set to Read-only so that no changes can be saved to the file.                                                                            (1)

**17 marks**

**SECTION B               WORD PROCESSING**

**QUESTION 2**

Open and work only in the folder named *Question2*.

Open the document called **Q2_Colonization of Mars.docx**.

*Note: In this document, page numbers and/or the location of paragraphs given in the questions could change due to formatting or editing of content in other parts of the document. For example, a paragraph at the bottom of page 3 could shift to the top of page 4.*

*Page 1*

2.1      Set the page margins of the document to *Normal*.                                    (1)

2.2      Apply the style *MainArticleHeader* to the text '*Living on Mars*'.          (1)

2.3      Format the image with the style *Rounded Diagonal Corner, White*. See the figure below with correct styling applied.                                      (1)
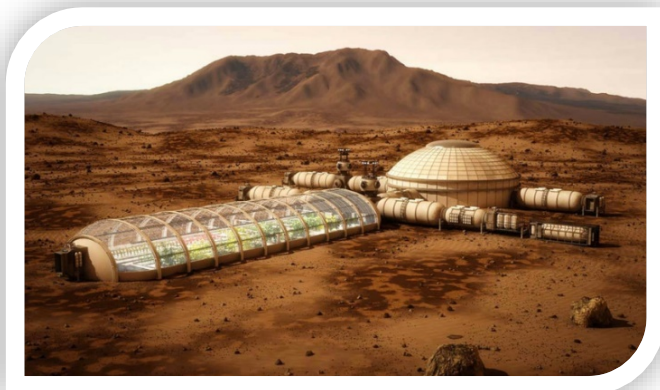


*Page 4*

2.4      Create a dropped-cap effect on the letter 'T' in the first paragraph after the heading. Ensure that it drops only two lines.                                (2)

2.5      Under the image insert a caption titled *'Figure 1 Colonisers on Mars'* (no quotation marks).                                                          (1)

2.6      Create a new style named *MySubTitle*, based on the *Normal* style, with font type Times New Roman, size 14, bold and underlined.                      (2)

2.7      Change the style of all text formatted with the *Temp* style (highlighted in yellow) to the *MySubTitle* style.                                        (1)

***Page 5*** (depending on previous questions' formatting)

2.8      Insert a bookmark called '*DFE'* in front of the heading *'Differences between Mars and Earth*' (no quotation marks).          (2)

2.9      Locate the text under the heading '*Relative similarity to Earth*' (highlighted in green).

    2.9.1      Convert this text to a hyperlink linking to the '*Differences between Mars and Earth*' heading.          (1)

    2.9.2      Create a screen tip that reads '*What is different about Mars?*' when the mouse hovers over the hyperlink.          (1)

2.10      Place a footnote at the end of the first bullet point (highlighted in blue). The footnote text can be obtained from the text file **Sources.txt** in the ***Question1*** folder.          (2)

***Page 7*** (depending on previous questions' formatting)

Locate the table on the page.

2.11      Place a table caption that reads '*Table 1 Atmospheric pressure comparison'* above the table (no quotation marks).          (2)

***Page 8*** (depending on previous questions' formatting)

2.12      Ensure the heading '*Transportation*' will always appear at the top of a new page. You may not use a manual page break, spaces or the enter key.          (2)

***Page 11*** (depending on previous questions' formatting)

In the '*Equipment needed for colonization*' paragraphs:

2.13      Convert the text after the first paragraph (starting with 'Basic' and ending with 'Mars aircraft') to a bulleted list using the image **rocketship.png** as the bullet instead of a symbol.          (2)

2.14      Adjust the tab alignment settings of the bulleted list as follows:

    2.14.1      First line indent at 1 cm.          (1)

    2.14.2      Hanging indent at 2 cm.          (1)



Example of indents using the ruler.

***Page 13*** (depending on previous questions' formatting)

2.15    Insert the image **Rover.jpg** at the beginning of the paragraph starting with '*The path to a human colony*' (after the heading 'Robotic precursors').     (1)

2.16    Format the image **Rover.jpg** as follows:

    2.16.1  Width: 5 cm     (1)

    2.16.2  Height: 4 cm     (1)

    2.16.3  Text wrap set to *Square*.     (1)

***Page 2***

2.17    Create an automatic table of contents using only *Heading 1* and *MySubTitle* styles as level 1 and level 2, respectively.     (2)

***Page 3***

2.18    Update the *Table of Tables* section to automatically show the table caption of the table referred to in Question 2.11.     (1)

***Last page***

2.19    Convert the last line of text, starting with '*Do you*' to WordArt. Use any form and style.     (1)

2.20    Number all pages, except the first page, automatically. Odd numbers on the left, even numbers on the right.     (4)

2.21    Protect the document by marking it as final.     (1)

Save and close the document.

**[36]**

**QUESTION 3**

Open and work only in the folder named *Question3*.

Open the document called **Q3_Mars Information Pack.docx**.

*Page 1*

3.1     Place a page border around page 1 only.     (2)

*Page 2*

3.2     Change the orientation of page 2 to landscape. All other pages must remain portrait.     (3)

*Page 3*

3.3     Format the heading '*Some Mars Facts*' as follows:

   3.3.1     Centre the heading using a centre tab at 8 cm.     (2)

   3.3.2     Place a double-lined paragraph border around the heading.     (2)

3.4     Insert the contents of the **MarsFacts.txt** file just below the heading '*Some Mars Facts*' and convert it to a table of three columns and eleven rows.     (3)

3.5     Correct the incorrectly spelt word in the first paragraph under the heading '*The Martian Moons*'.     (1)

3.6     Format the two paragraphs under the heading '*The Martian Moons*' as follows:

   3.6.1     Place the text in two columns **without** the use of tables.     (1)

   3.6.2     Ensure that the sentence beginning with '*And people may*' begins at the top of the second column.     (1)

3.7     Shade the paragraph under '*How the Mars Moons Got their Names*' any colour.     (1)

*Page 4*

3.8     Locate the heading '*How much do you know about the Red Planet?*'.

   Ensure that the words '*solar system*', located in the first point, will always be together and not separated over two lines.     (1)

Save and close the document.

**[17]**

**53 marks**

## SECTION C                    SPREADSHEETS

## QUESTION 4

Open and work only in the folder named *Question4.*

Open the file **Q4_Applicants.xlsx**.

**Worksheet:** *Countries*

4.1     Use a function in **B1** to display only the first two letters of the country code from the text in **A1**. Copy the function down for all cells.

For example, AF/AFG in **A1** becomes AF in **B1**.



(3)

**Worksheet:** *Applicants*

4.2     Adjust the view of the worksheet so that Row 1 **does not scroll** when scrolling in the worksheet occurs.          (1)

4.3     Each applicant requires a special access code to log into their *Personalised Online Training Portfolio System.* The code is made up as a combination of their id and their LastName, e.g.



Correctly generate the access codes in **Column B** for each applicant.          (3)

4.4     Use a function in **Column I** to display the full country name for each applicant, based on the country code in **Column H** and the information in the *Countries* worksheet.          (4)

4.5     Correct the issue causing the figures in **Column M** to display incorrectly.          (1)

4.6     Applicants are encouraged to pay a deposit of at least 50% of the R100 000 programme fee in order to receive a 10% discount on the deposit. Calculate the discount amount for the first applicant in **N2**. Copy the calculation down for all applicants.          (3)

4.7     Calculate in **Column O** what each applicant still owes. The programme fee is in **Q1**. Format the column as Currency.          (4)

4.8     For randomisation of groups, each applicant is given a random score between 1 and 10. Using a function in **Column P**, generate a random number between 1 and 10 for each applicant.          (2)

4.9     Use Excel functions to calculate the following:

        4.9.1    In **Q503**: The total amount of fees owed.                                    (2)

        4.9.2    In **Q504**: The number of applicants that have not made any payment
                 yet.                                                                          (2)

        4.9.3    In **Q505**: The total fees owing that do not qualify for a discount.          (4)

**Worksheet:** *Fitness*

4.10    Centre the text in **A1:G1** horizontally and vertically.                               (1)

4.11    Every applicant's body mass index (BMI) must be calculated by dividing his
        or her weight by the square of his or her height. Using an appropriate
        formula, calculate the BMI for each applicant in **Column F**.                          (2)

4.12    In **Column G**, use an appropriate formula/function to display the health
        condition of each applicant based on their BMI. Use the information from
        **I1:K3** to assist you.                                                                (4)

4.13    Use an appropriate formula/function to show the number of applicants for
        each health condition, i.e. Unhealthy; Healthy; Overweight in **J5:J7**.                (3)

4.14    Use conditional formatting to highlight any cells in **Column G** that contain
        the word 'Overweight'. You may choose your own formatting style(s).                     (2)

Save and close the workbook.

**[41]**

**QUESTION 5**

Open and work only in the folder named ***Question5.***

Open the file **Q5_ApplicantInterests.xlsx**.

**Worksheet:** *Ages*

5.1     Determine the present age of each applicant in Column **E** without decimals.          (2)

**Worksheet:** *Mining*

5.2     Filter the data to display only those applicants who have an interest in '*mining*'.          (2)

**Worksheet:** *CountryInterests*

5.3     Create a pivot table showing the various interest categories and the number of applicants from each country. See Figure 1 below as the example.

| Row Labels | Count of Interest |
|---|---|
| ⊟ **ARCHAEOLOGY** | **35** |
| Brazil | 1 |
| Cameroon | 1 |
| Canada | 1 |
| China | 5 |
| Colombia | 1 |
| Czech Republic | 2 |
| Egypt | 1 |
| Greece | 1 |
| Indonesia | 5 |
| Iran | 1 |
| Ireland | 1 |
| Netherlands | 1 |
| Oman | 1 |
| Palestine | 1 |
| Poland | 3 |
| Portugal | 5 |
| Russia | 1 |
| Tunisia | 1 |
| United States | 1 |
| Yemen | 1 |
| ⊟ **ARCHITECTURE** | **27** |
| Albania | 1 |
| Armenia | 1 |
| Brazil | 1 |

**Figure 1: Example of Pivot Table data**          (4)

Save and close the workbook.

Open the file **Q5_Interviews.xlsm**. Enable macros – Click 'Enable Content' – if prompted to do so.

SECURITY WARNING   Macros have been disabled.    Enable Content
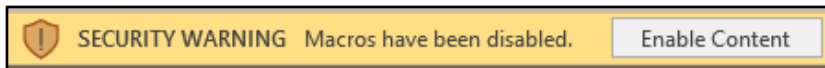
5.4    Create a macro that will run when the keyboard shortcut CTRL + I (capital letter I, not number 1) is pressed. The macro must write the word 'Interview' – no quotation marks – in any selected cell. Name the macro **Interview**.    (3)

5.5    Create a button in **F1** with the word 'Interview' on it. Assign the **Interview** macro to the button so that it runs the macro when the button is clicked.    (2)

Save and close the workbook.

**[13]**

**54 marks**

**SECTION D               DATABASE**

**QUESTION 6**

*2Mars* has created a database to keep track of all the applicants. Follow the instructions below to create the various queries, forms and reports needed by the company to manage their data.

Open and work only in the folder named *Question6*.

Open the Microsoft Access Database called **Q6_MarsEntries.accdb**.

**Tables:** *tblApplicants*

6.1     The table is missing a primary key. Select and enable the most appropriate field to be a primary key.                                                                                      (2)

6.2     Import the applicants from the **ExtraApplicants.xlsx** file into the *tblApplicants* table.                                                                                                         (2)

6.3     The field AccessCode must follow a specific format. Use the example format given below, showing letters, numbers and case. Ensure that data entered into the AccessCode field follows this format exactly.

        Example format: **Abcde1234FG**                                                                       (4)

6.4     Change the field size of the LastName and FirstName fields to 50 characters.                                                                                                                       (1)

6.5     No birth dates before the 1st of January 1980 are allowed to be entered into the Birthdate field. Create a rule to enforce this. Supply a meaningful text message to the user, should they enter incorrect data.                                  (3)

6.6     Change the data type of the Email field so that one can simply click on the email address to send an email.                                                                                (1)

6.7     Change the Interest field to display a combo box when selected. The values must come from the *tblInterest* table.                                                                       (2)

6.8     Use a feature to automatically calculate and display the total amount of fees paid when the table is viewed.                                                                              (1)

**Queries**

6.9     The *2Mars* director wants to know how many applicants have not yet paid for the programme at all. Create a query called *qryNotPaid* showing all applicants who have not yet paid any fees. The only visible fields required are LastName, FirstName and Email.                                                           (3)

6.10    There are some applicants who have expressed an interest in survival skills. *2Mars* wants to see a list of those interested applicants who *also* scored between 8 and 10. Create a query called *qrySurvival* showing their LastName, FirstName, Interest and Score. Sort in descending order according to Score.                                                                                            (4)

6.11    Create a query, *qryProfessionsCount*, showing all <u>JobTitles</u> and the total number of applicants per title.     (3)

**Forms**

6.12    Create a form called *frmApplicants*, containing all fields from the *tblApplicants* table.     (2)

6.13    Create a form called *frmApplicantsTrainingLevels*.

      6.13.1  It must contain the <u>LastName</u> and <u>FirstName</u> of applicants.     (1)

      6.13.2  It must contain a sub-form with data obtained from the <u>TrainingLevel</u> field in the *tblTrainingLevel* table. Only the <u>TrainingLevel</u> field needs to be visible.     (3)

**Reports**

6.14    A report has been requested that must be grouped according to <u>Country</u> and show each applicant's <u>Title</u>, <u>FirstName</u> and <u>LastName</u>. Create the report and also calculate the number of applicants in each country beneath each group. Save the report as *rptCountryParticipation*.     (4)

6.15    Open the report titled *rptPaidLessThan50%* and format it as follows:

      6.15.1  Add the <u>FeesPaid</u> field to the report.     (2)

      6.15.2  Use conditional formatting to automatically highlight amounts that are less than R50 000.     (2)

Save and close the database and all its objects.     **[40]**

**40 marks**

**SECTION E          WEB DEVELOPMENT (HTML DESIGN)**

**QUESTION 7**

Open and work only in the folder named *Question7*.

Open the document **index.html** using a text-only HTML editor.

| | | |
|---|---|---|
| 7.1 | Set the HTML document title to **The Red Planet**. | (1) |
| 7.2 | Set the web page background colour to *#BB1B1B*. | (1) |
| 7.3 | Set the text '**Living on Mars**' at the top of the page to be coloured white. | (1) |
| 7.4 | Format the TABLE tag as follows: | |
| | 7.4.1   No table border | (1) |
| | 7.4.2   Table width: 75% | (1) |
| 7.5 | Insert the image **rocketship.png** in the first cell of the table. Width must be 200 px. | (2) |
| 7.6 | Ensure that the image, **mars.gif**, links to https://youtu.be/123mars when clicked on. | (2) |
| 7.7 | Enable text to appear when the mouse hovers over the image, **mars.gif**. The text '*Mars in 4k*' must display as the mouse hovers over the image. | (1) |
| 7.8 | Format the heading **Want to live on Mars?** with a Heading 2 tag and centre it. | (2) |
| 7.9 | Convert the text under the heading '**Want to live on Mars?**' to a bulleted list. | (2) |
| 7.10 | Place the text at the end of the document, starting with '**Website updated by**', in comment tags so it does not display on the actual web page. Replace the text '*Student candidate no. here*' with your own exam number. | (2) |

Save and close the file.

**16 marks**

**Total: 180 marks**