NATIONAL SENIOR CERTIFICATE EXAMINATION
NOVEMBER 2023

COMPUTER APPLICATIONS TECHNOLOGY: PAPER I

Time: 3 hours   180 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of 19 pages and an appendix (HTML Tag List and Input Mask Character Sheet) of 2 pages (i–ii). Please check that your question paper is complete.

2. Before you begin, rename your Data Files folder to *your* examination number.
    E.g.: 🗀 **Data Files** becomes 🗀 **1234567890**.

3. The examination consists of 5 sections and 9 questions. All questions in all sections must be answered *except* **for an option question in Question 7**. Follow the instructions for this question carefully.

4. You must use a text editor for the HTML section. Acceptable applications are Notepad, Notepad++ or WordPad. Microsoft Word may **NOT** be used for HTML coding.

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

6. 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.

7. Save your work regularly.

8. 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.

9. Screenshots should be appropriately cropped to display all relevant information only.

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

    - 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 instructed to do so.

13. Do not rename any files or folders unless instructed to do so.

14. Do not create any folders or subfolders unless instructed to do so.

15. Do not delete, move or duplicate any files or folders unless instructed to do so.

16. Save your work at regular intervals to prevent data loss. Backup data files will be made available to you by your teacher/invigilator, if needed.

The contents of your examination *Data Files* folder and subfolders are as follows:

Data Files	Q1 * Empty	Q1 Entries
📁 Q1 📁 Q2 📁 Q3 📁 Q4 📁 Q5 📁 Q6 📁 Q7 📁 Q8 📁 Q9 📄 Student_Screenshots.docx	📁 Backup* 📁 Entries 📁 Miscellaneous * 📁 Racers * 📄 _Q1_Answers.docx 🖼 03Bike.png 🖼 174Quad.png 🖼 201Car.png 🖼 500Truck.png 📄 2023_Dakar_Rally.docx 🖼 Bike.jpg 🗄 Competition.accdb 📊 ContactNames.xlsx 📊 Dakar_Welcome.pptx 📄 DR2023.txt 📊 Entry_List.xlsx 🌐 ram.webp 📄 Stages.rtf 📄 Stages.txt 🎵 The_Race.mp3	📁 Section_A 📁 Section_B **Section_A** 📊 Entries_Section_A.xlsx **Section_B** 📊 Entries_Section_B.xlsx
Q2	**Q3**	**Q4**
📄 2DakarRally.docx 🖼 Logo.jpg	📄 3_1Rankings.docx 📄 3_2Protect.docx 📄 Source.txt	📄 4Vehicles.docx 🖼 bullet.png
Q5	**Q6**	**Q7**
📊 5DRally.xlsx 🖼 Wallpaper.jpg	📊 6RaceAccounts.xlsx	📊 7RallyStats.xlsm
Q8	**Q9**	**Q9 img**
🗄 Rally2024.accdb 📊 TeamsImport.csv	📁 img 🌐 index.html 🌐 signup.html	🖼 bgimage.jpg 🖼 Dakar_Rally.jpg 🖼 SignUpButton.png

Check each folder and ensure that every file/document/folder is accessible.

Scenario

The Dakar is a desert rally covering several thousand kilometres. The event takes place over a period of ten to fifteen days in Saudi Arabia. Racers come from all over the world on bikes, cars, quads, and trucks to compete.

SECTION A　　　　FILE AND FOLDER MANAGEMENT

QUESTION 1

Open and work only in the folder named **Q1**.

Ensure that the view in the **File Explorer** window is set to the *Details* layout view.

1.1　　Answer the following questions by inserting your answers in the **_Q1_Answers** document.

　　　1.1.1　Sort the contents of the **Q1** folder in descending order, according to *Name*. Take a screenshot of the sorted contents only and insert the screenshot into the **_Q1_Answers** document. (2)

　　　1.1.2　Determine the file size, in MB, of the MP3 file named **The_Race**. Insert your answer in the **_Q1_Answers** document. (1)

　　　1.1.3　Find the bit depth property of the image **500Truck.png** and write down the number in the **_Q1_Answers** document. (1)

　　　1.1.4　Provide TWO main differences and/or limitations between *.txt* and *.rtf* file types. Use **Stages.rtf** and **Stages.txt** to compare. Do *not* refer to file size. (2)

　　　1.1.5　Determine the date that the file **Entries_Section_A.xlsx** was modified. The file is located in the **Entries** folder, **Section_A** subfolder. Write the exact date, or provide a screenshot, in the **_Q1_Answers** document. (1)

1.2　　Add the *Slides* column to the **File Explorer** window. (1)

1.3　　Take a screenshot showing that the column *Slides* has been added. The screenshot must contain all column headings and the **Q1** folder contents only. Insert the screenshot into the **_Q1_Answers** document. (2)

1.4　　Without opening the file, determine the default application that your computer will use to open the **The_Race.mp3** file. Insert a screenshot showing the answer in the **_Q1_Answers** document. (1)

1.5　　Rename the folder **Miscellaneous** to **Temp**. (1)

1.6   Move *all* Microsoft Office application files to the **Temp** folder (previously the Miscellaneous folder). Do *not* copy or move the **_Q1_Answers** document.   (2)

1.7   Copy all image files to the **Backup** folder.   (2)

1.8   Compress/zip the **ContactNames.xlsx** file.   (1)

1.9   Create a shortcut to any application that exists on your computer.   (1)

1.10   Perform a search on the **Q1** folder to find all existing Excel files. Take a screenshot and insert it in the **_Q1_Answers** document. Your screenshot must show that a valid search has taken place and include the address and search bar with the search term/phrase appearing in the search bar.   (2)

20 marks

SECTION B   WORD PROCESSING

QUESTION 2

Open and work only in the folder named **Q2**.

Open the document **2DakarRally** and edit it according to the instructions below.

2.1   Adjust the page margins to 1 cm on all sides.   (1)

Page 1

2.2   Insert the image **Logo.jpg** on page 1. The image is located in the **Q2** folder.   (1)

2.3   Adjust the height of **Logo.jpg** to 8 cm exactly.   (1)

2.4   Position the image **Logo.jpg** vertically and horizontally on the page so it
        displays in the 'middle' of the whole page. See Figure 1.   (1)

Figure 1

2.5   Change the font of all paragraphs (below the heading text) to *Times New
        Roman*.   (1)

2.6   Adjust the line spacing of all paragraphs to 1.75. Do not make any changes
        to the 8 pt paragraph spacing.   (2)

2.7   Justify the text alignment in all paragraphs.   (1)

2.8   Insert a dropped cap with the letter 'T' for the first paragraph located below the
        heading 'The Dakar Rally'. See Figure 2 on the next page as a reference.   (1)

The Dakar Rally

The Dakar Rally (or simply 'The Dakar'; formerly known as the 'Paris-Dakar Rally') is an annual rally raid organised by the Amaury Sport Organisation. Most events since the inception in 1978 were staged from Paris, France, to Dakar, Senegal, but due to security threats in Mauritania, which led to the cancellation of the 2008 rally, events from 2009 to 2019 were held in South America. Since 2020, the rally has been held in Saudi Arabia. The event is open to amateur and professional entries, amateurs typically making up about eighty percent of the participants.

Figure 2

2.9   Locate the image behind the text. Format and position it so that the paragraph text wraps around it instead of appearing over it. See Figure 3 as an example.   (2)

The rally is an off-road endurance event. The terrain that the competitors traverse is much tougher than that used in conventional rallying, and the vehicles used are typically true off-road vehicles and motorcycles, rather than modified on-road vehicles. Most of the competitive special sections are off-road, crossing dunes, mud, camel grass, rocks, and erg among others. The distances of each stage covered vary from short distances up to 800–900 kilometres per day.

Figure 3

2.10   Insert an image caption below the photograph located at the end of the document. The caption should read **Figure 1 Thierry Sabine**. See Figure 4 below as an example.   (2)

Figure 1Thierry Sabine

Figure 4

2.11   Add a new source that you can use as a reference to find out more about Thierry Sabine by capturing the following information in your source manager: (2)

Web page: HistoricRacing
Year: 2006
Month: June
Day: 12
Accessed: 2023
URL: https://www.historicracing.com/driverDetail.cfm?driverID=2275

Save and close the document.

[15]

QUESTION 3

Open and work only in the folder named **Q3**.

Open the document **3_1Rankings** and edit it according to the instructions below.

3.1   Adjust the page orientation to landscape.   (1)

3.2   Create a new style called **Rankings** which must include the following
       properties: (1)

   3.2.1   Font must be bold, italicised, and double-underlined.   (2)

   3.2.2   Font size must be 23.5 pt.   (1)

3.3   Apply the **Rankings** style to the text '2022 Rankings' at the top of the
       document. If you did not create a **Rankings** style, use **Heading 1** as the style
       instead.   (1)

3.4   Apply FOUR columns to the content, after the main heading, with a line
       between each column. Use an appropriate break to ensure that each heading
       ('BIKE', 'QUAD', 'CAR' and 'TRUCK') appears automatically at the top of each
       column. See Figure 5 as an example.   (3)

Figure 5

3.5   Insert a Footnote at the heading '2022 Rankings'. The content for the footnote
       is the **Source.txt** file, located in the **Q3** folder. NOTE: The content must be
       inserted as an object icon. Embed the file as an icon, do not link to it.   (2)

3.6   Accept the proposed changes in the document.   (1)

Save and close the document.

Open the document **3_2Protect** and edit it according to the instructions below.

3.7   Add a page border of your choice to the document.   (1)

3.8   Mark the document **3_2Protect** as *Final* to discourage further editing.   (2)

Save and close the document.

[15]

QUESTION 4

Open and work only in the folder named **Q4**.

Open the document **4Vehicles** and edit it according to the instructions below.
Page 1

4.1   Format the paragraph, beginning with 'The five competitive …' and ending with '… or purpose-built' as follows:

    4.1.1   Indent the paragraph 3 cm from the left.   (1)

    4.1.2   Place a right indent at 13 cm.   (1)

    4.1.3   Apply a paragraph shadow border, with any colour of your choice, to the paragraph.   (2)

    4.1.4   Apply 24 pt paragraph spacing after this paragraph.   (2)

4.2   Insert a table of contents below the title 'Table of Contents: Vehicles'.   (1)

    4.2.1   Display only the headings formatted with the **Heading 2** style.   (1)

    See Figure 6 as an example.

Table of Contents: Vehicles

Motorbikes	2
Quads	2
Cars	3
Trucks	4

Figure 6

4.3   Insert automatic page numbering of your choice, for all pages, in the footer.   (1)

Page 2

4.4   Insert a bookmark named 'bike' (no quotations) in front of the text 'Motorbikes' located in the first row of the table.   (1)

4.5   Type the text 'Dakar Vehicles' in the header of the document. It should not display on page 1.   (1)

4.6   Split the table at the rows containing the heading 'Trucks'.   (1)

Page 4

4.7   Convert the text, which starts below 'The best known …', in the Trucks section, into a list with main points and subpoints. Use the **bullet.png** (located in the **Q4** folder) as the main bullet point. See Figure 7 as an example. You do not need to change the default symbol for the sub-points. NOTE: You do not have to align the sub-points as per the example.   (2)
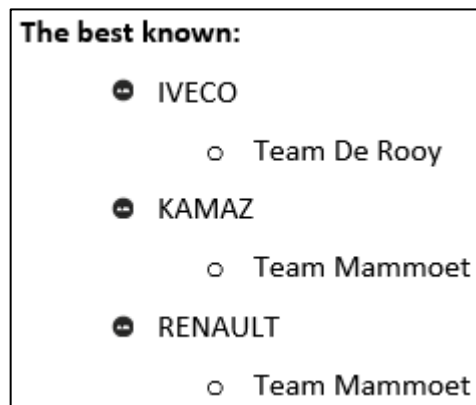
Figure 7

Page 5 (2023 Route Map)

NOTE: The page number may differ, depending on your formatting of the previous questions.

4.8   The page containing the route map must be displayed in landscape orientation. All other pages in the document must remain portrait.   (2)

Page 6

4.9   For each heading, highlighted in green, place a right-aligned tab stop at 10 cm, with a dotted leader. The leader must be visible. See Figure 8 as an example.   (2)
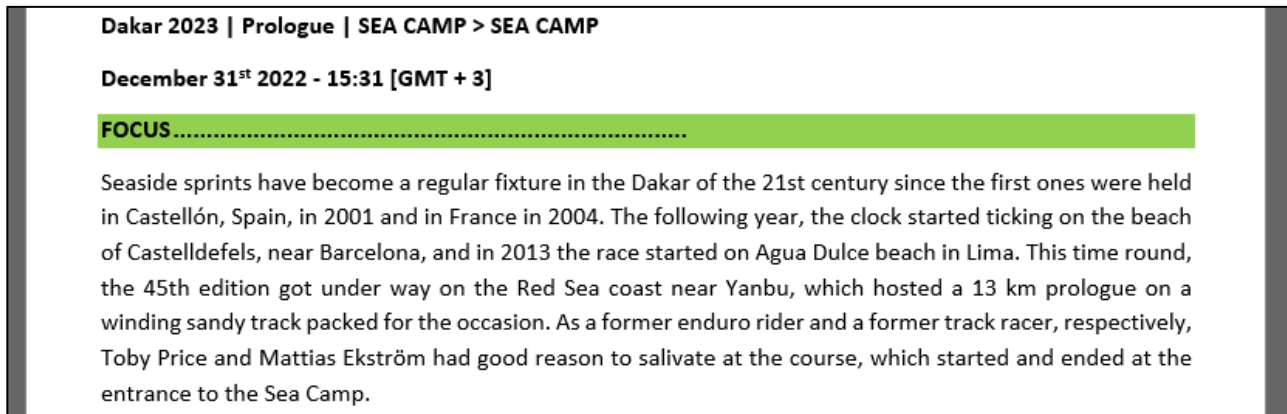
Figure 8

4.10   Format the paragraph below the heading 'A CRUSHING BLOW' so that it is not split across two pages.   (1)

4.11   Locate the text 'bikers' in the last sentence of the document. Convert the text 'bikers' into a hyperlink, linking to the heading 'Motorbikes'.   (1)

Save and close the document.

[20]

50 marks

SECTION C   SPREADSHEETS

QUESTION 5

Open and work only in the folder named **Q5**.

Open the workbook **5DRally** and edit it according to the instructions below.

Results worksheet

5.1   Set the height of **Row 1** to 51 pt.   (1)

5.2   Merge and centre cells **A1:J1**.   (1)

5.3   Set **rows 1** and **2** to remain in place so that when a user scrolls up or down, rows 1 and 2 remain in place and do not move.   (1)

5.4   Correct the issue in **Column G**, which is incorrectly displaying content.   (1)

5.5   Apply the table style *Light Blue, Table Style Light 16* to the range **A2:J167**.   (1)

Teams worksheet

5.6   Sort **Column A** alphabetically from A to Z.   (1)

5.7   Use an Excel feature to remove all duplicate items in **Column A**.   (1)

5.8   Calculate, in cell **C2**, using an appropriate function, the number of teams listed.   (1)

Chart worksheet

5.9   Create a 2-D pie chart using the data in **B3:C6**. See Figure 9 on the next page as an example.   (1)

5.10   Use the chart filter to hide 'Quads' from the chart.   (1)

5.11   Ensure that the title of the chart reads 'Number of Vehicles per Category' in white.   (1)

5.12   Data labels for the sections should appear on the outside of each section.   (1)

5.13   Data labels must have a black background with white text.   (1)

5.14   Separate the 'Bikes' section slightly from the rest of the pie.   (1)

5.15   Use the image **Wallpaper.jpg**, located in the **Q5** folder, as the chart background.   (1)
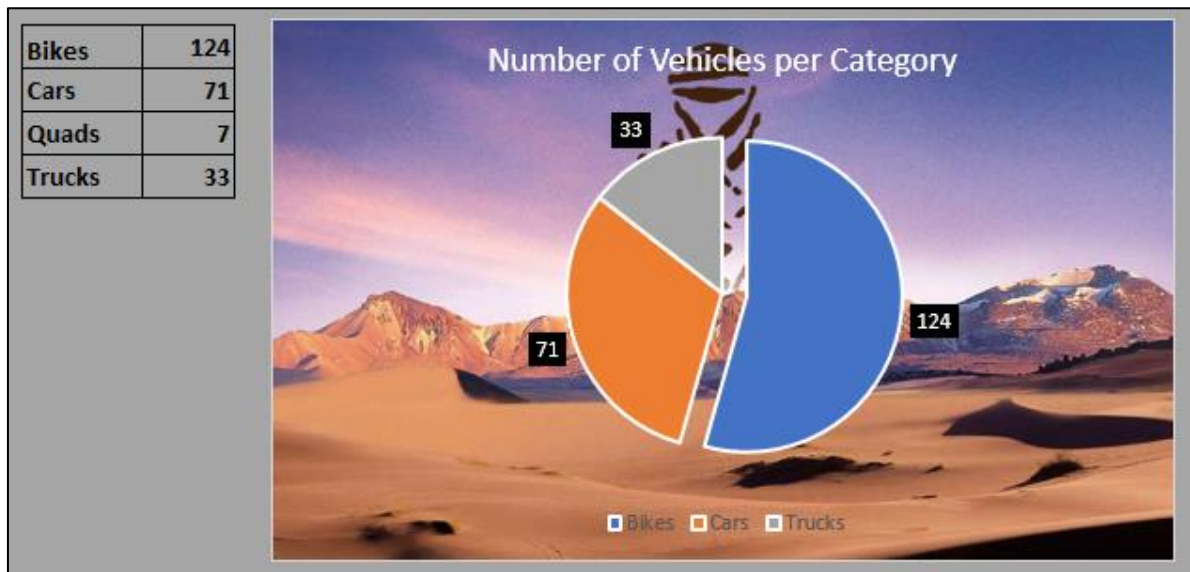
Figure 9

Save and close the workbook.

[15]

QUESTION 6

Open and work only in the folder named **Q6**.

Open the workbook **6RaceAccounts** and edit it according to the instructions below.

Accounts worksheet

6.1   Determine the full fees payable for every racer in **Column G**. The full fees are double the cost of the entry fees in **Column F**.   (2)

6.2   Create a unique Racer Tag Number for each racer in **Column B**. The Tag Number consists of the following:

      6.2.1   Begins with a **#** symbol, followed by;

      6.2.2   the racer number (from **Column A**), followed by;

      6.2.3   a randomly generated number between 1 and 500.

      Example of a unique Racer Tag Number: **#87633**   (3)

6.3   If a racer is racing to raise money for a charity, this is indicated by the letter 'y' for yes, or 'n' for no, in **Column I**. Determine, in **Column J**, 15% of the full fee payable if a racer is supporting a charity, else the charity donation remains at zero.   (3)

6.4   Determine the amount due for each racer in **Column K**. The amount due is calculated by deducting the amount received and donations from the full fee payable.   (2)

6.5   Calculate, by means of a function, the full fee payable for each vehicle category in cells **N3:N6**. Use absolute cell referencing.   (4)

6.6   Use a function in cell **N8** to determine how many racers do not have insurance.   (2)

6.7   Determine in cell **N9** the number of racers who are supporting a charity. Use a function to obtain your answer.   (3)

6.8   Calculate in cell **N10**, by means of a function, the total amount of money donated by all car drivers. Format the cell as currency with the (Euro) symbol.   (6)

Racers worksheet

6.9   Each racer in **Column B** has their country code in front of their name. Using appropriate functions, display in **Column E** which country each racer is from. A list of country codes and full country names is available in the **Codes** worksheet. The first entry has been provided as an example of the desired answer.   (5)

Save and close the workbook.

[30]

QUESTION 7

Open and work only in the folder named **Q7**.
Open the macro-enabled workbook **7RallyStats**.

When opening the workbook, you might see a security warning. Please click the '**Enable Content**' button.

⚠️ SECURITY WARNING Macros have been disabled.	Enable Content
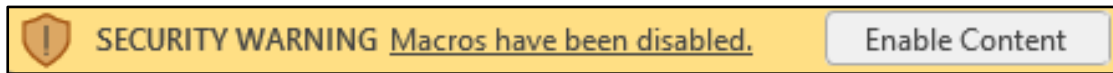
Question 7 consists of **TWO** options. You must choose *only* **ONE** option to answer.

- Option A is creating a pivot table.
- Option B is creating a macro.

> ⚠️ Only choose **ONE** option. If you do both options, only Option A will be marked. Option B will be discarded.

OPTION A

A-PivotTable worksheet

Create a pivot table using the data from the **TableData** worksheet. The table must display the total count of each country's vehicles (categorised as 'class') and teams per vehicle. See Figure 10 as an example.   (5)

Class of vehicle per country and Team breakdown	
Row Labels	**Count of Class**
⊟ **Argentina**	12
⊟ **Bike**	6
HT RALLY RAID HUSQVARNA RACING	1
HUSQVARNA FACTORY RACING	1
MAN TEAM	1
RED BULL KTM FACTORY RACING	1
XRAIDS EXPERIENCE	1
XRAIDS EXPERIENCIE TEAM	1
⊟ **Car**	4
BAHRAIN RAID XTREME	1
OVERDRIVE TOYOTA	2
X-RAID MINI JCW TEAM	1
⊟ **Quad**	2
DRAG'ON RALLY TEAM	1
VERZA RALLY TEAM	1
⊟ **Australia**	1
⊟ **Bike**	1
RED BULL KTM FACTORY RACING	1
⊟ **Austria**	2
⊟ **Bike**	2
KLYMCIW RACING	1
RED BULL KTM FACTORY RACING	1
⊟ **Belgium**	6
⊟ **Bike**	3
BAS WORLD KTM RACING	1
RSCONCEPT	1

Figure 10

Save and close the workbook.

OPTION B

B-Macro worksheet

Create a macro called '**Sort_Highlight**'.

- Assign **CTRL+k** as the keyboard shortcut to run the macro.
- The macro must sort all the data alphabetically from A to Z according to *Team* (**Column C**).
- The macro must also highlight all the cells in **Column D** that contain the word 'Bike'.
- Attach the macro to the button image that says 'Sort and Highlight' so that it runs when the image is clicked.   (5)

Save and close the workbook.   **[5]**

50 marks

SECTION D   DATABASE

QUESTION 8

Open and work only in the folder named **Q8**. Remember to save each query, form and report before closing.

Open the database file **Rally2024**.

8.1   Import the CSV file **TeamsImport**, located in the **Q8** folder, into a new table called *tbl_Teams*. No Primary Key is necessary.   (2)

Tables

tbl_Racers

8.2   Adjust the field properties of the following fields:

	Field name	**Properties**	
8.2.1	first_name last_name	• 50 characters in length.	(1)
8.2.2	email	• Change the data type so that a user can click on an email address to automatically open the email application.	(1)
8.2.3	dob	• The date of birth must be filled in for every record and may not be left empty.	(1)
8.2.4	country	• Must get its values from the table *tbl_Countries*. • Presents as a combo box.	(2)
8.2.5	experience	• A new record must have a default value of 1. • Only numbers between (and including) 1 and 10 may be entered in this field.	(2)

8.2.6	classVIN	• No duplicates for this field are allowed (do *not* make it the primary key).
		
		• Data entered must be in the following format:
		   o 10 characters and/or digits.
		   o All uppercase.
		   o No spaces allowed.
			(4)

Forms

8.3   Create a form called *frm_Racers*. It must contain all fields from *tbl_Racers* except <u>id</u>.   (2)

8.4   Edit the form *frm_DataCapture* as follows:

    8.4.1   Edit the text in the header to read 'Racer information'.   (1)

    8.4.2   Change the header section colour to any other colour.   (1)

    8.4.3   Insert a button in the form header that navigates forward, one record at a time.   (2)

Reports

8.5   Create a report, using *tbl_Racers*, called *rpt_CountriesByClass*.   (1)

    8.5.1   Use the fields <u>class</u>, <u>country</u>, <u>first_name</u> and <u>last_name</u>.   (1)

    8.5.2   Group the data by <u>class</u>.   (1)

    8.5.3   Format the details section with alternating row colours (not default grey).   (1)

8.6   Open and edit the report called *rpt_RacersPerCountry*.

    8.6.1   Add a footer section for the <u>country</u> field.   (1)

    8.6.2   Calculate and display the number of racers per country, in the <u>country</u> footer.   (2)

    8.6.3   Calculate and display the average <u>experience</u> figure per country, in the <u>country</u> footer.   (2)

    8.6.4   Display the highest experience rating for all records in the report footer.   (1)

Queries

8.7   Create a query called *qry1_Countries* from *tbl_Racers*.   (1)

    8.7.1   Display <u>last_name</u>, <u>first_name</u>, <u>country</u> and <u>email</u>.   (1)

    8.7.2   Sort the query, ascending, according to <u>country</u>.   (1)

8.8   Create a query called *qry2_Birthdays* from *tbl_Racers*.

    8.8.1   Display <u>first_name</u>, <u>last_name</u> and <u>dob</u>.   (1)

    8.8.2   Format the birth dates to display as long date format.   (1)

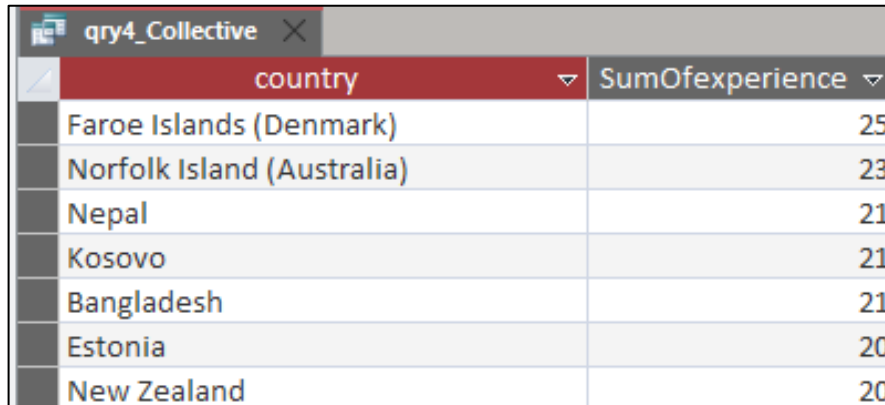   Example: Tuesday, 05 December 1998

8.9   Open the query *qry3_TenOrBike.*

         Display all racers who have an <u>experience</u> rating of 10 or who have entered
         in the bike <u>class</u>.   (2)

8.10   Open the query *qry4_Collective.*

         Edit the query so that the total <u>experience</u> ratings are added together per
         <u>country</u> and displayed per <u>country</u>. See Figure 11 below as an example of an
         excerpt of the desired output.   (2)

country	SumOfexperience
Faroe Islands (Denmark)	25
Norfolk Island (Australia)	23
Nepal	21
Kosovo	21
Bangladesh	21
Estonia	20
New Zealand	20

Figure 11

8.11   Open the query *qry5_Experience.*

         Edit the criteria to display all racers from any country that contains the word
         'south' and also have an experience rating of 5 and above.   (2)

Save and close the database.

40 marks

SECTION E   HTML

QUESTION 9

Open and work only in the folder named **Q9**.

Open the webpage **index** using your chosen text editor.

9.1   Give the document a title: *The Dakar Rally*.   (2)

9.2   Set the text colour of the entire web page to White.   (1)

9.3   Set the border attribute of the first table (being used as an outline) to 4 px.   (2)

9.4   Format the text *Dakar 2024* (located in the main heading row) with a
       Heading 1 tag and centre the heading.   (2)

9.5   Insert the **Dakar_Rally** image in the designated location (indicated with a
       comment) in the first content row.   (1)

9.6   Adjust the width of the **SignUpButton** image to **150px**.   (1)

9.7   Convert the **SignUpButton** image into a hyperlink that links to the
       signup.html file.   (2)

9.8   Change the font size of the paragraph starting with '*The 2024 Dakar Rally is
       a rally …*' and ending with *'… World Rally-Raid Championship.*', to **4**.   (2)

9.9   Set the font face of the paragraph text, from Question 9.8, to **Arial**.   (2)

9.10   Correct the bulleted list so that list items display correctly as bullets.   (2)

9.11   Edit the appropriate tag and add the correct attribute so that the footer row
       spans across three columns.   (2)

9.12   Edit the text at the end of the page by entering your examination number.   (1)

20 marks

Total: 180 marks