



NATIONAL SENIOR CERTIFICATE EXAMINATION  
MAY 2023

**COMPUTER APPLICATIONS TECHNOLOGY: PAPER I**

Time: 3 hours

180 marks

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**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY**

1. This question paper consists of 15 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 examination 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. Microsoft Word may **NOT** be used for HTML coding.
4. Use functions and/or formulas to calculate answers, unless otherwise instructed.
5. Do not do more than is required by the question.
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. 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
10. You may use the offline help function in each application.

11. 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.
12. Before you begin, rename your data folder to your examination number.
13. Do **NOT** rename any other files or folders unless instructed to do so.
14. Save your work on 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 sub-folders are as follows:**

Data Files	QUESTION 1	QUESTION 2
<ul style="list-style-type: none"> <li> QUESTION 1</li> <li> QUESTION 2</li> <li> QUESTION 3</li> <li> QUESTION 4</li> <li> QUESTION 5</li> <li> QUESTION 6</li> <li> QUESTION 7</li> <li> Student_Screenshots.docx</li> </ul>	<ul style="list-style-type: none"> <li> Agenda ← Empty</li> <li> _Q1Answers.docx</li> <li> CarHire.zip</li> <li> Castle.webp</li> <li> FlagOfScotland.jpg</li> <li> History.rtf</li> <li> MapofScotland.jpg</li> <li> PrivateDetails.docx</li> <li> RailRoutes.jpg</li> <li> ReviewFormat.docx</li> <li> Reviews.docx</li> <li> Scotland-national-anthem.mp3</li> </ul>	<ul style="list-style-type: none"> <li> DocumentSources.txt</li> <li> Q2_AboutScotland.docx</li> <li> Q2_TripPlanner.docx</li> <li> Travel.jpg</li> </ul>
QUESTION 3	QUESTION 4	QUESTION 5
<ul style="list-style-type: none"> <li> Food.jpg</li> <li> Q3_Food.docx</li> <li> Q3_Itinerary.docx</li> </ul>	<ul style="list-style-type: none"> <li> Flight.jpg</li> <li> Q4_Flights.xlsx</li> </ul>	<ul style="list-style-type: none"> <li> Q5_Weather.xlsm</li> </ul>
QUESTION 6	QUESTION 7	QUESTION 7 images
<ul style="list-style-type: none"> <li> Q6_Accommodation.accdb</li> <li> Q6_Screenshot.docx</li> <li> ScotlandAccommodationData.xlsx</li> </ul>	<ul style="list-style-type: none"> <li> images</li> <li> index.html</li> </ul>	<ul style="list-style-type: none"> <li> EdinburghCastle.jpg</li> <li> ScotFlag.jpg</li> </ul>

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

### Contextual Scenario

#### **We're off to Scotland!**

Frank and Godwin have completed matric and are planning a trip overseas. They have decided that they would like to spend a few weeks in Scotland. They are interested in seeing as much of Scotland as possible, staying at various locations, camping at some, and using various local transport options, including hired cars, to move around. Their first step to planning their trip is researching and organising all the information they will need so that their holiday will be a success.



**SECTION A FILE AND FOLDER MANAGEMENT****QUESTION 1**

Open and work *only* in the folder named **QUESTION 1**.

- 1.1 Adjust the view of the File Explorer window as follows:
  - 1.1.1 Switch the window layout view to **Content** view. (1)
  - 1.1.2 Group the contents of the folder by Name. (2)
  - 1.1.3 Sort the content according to file size. (1)
  - 1.1.4 Take a screenshot showing only all the sorted contents and insert the screenshot in the **\_Q1Answers.docx** document. (2)
- 1.2 Enable file name extensions. Provide a screenshot showing that file name extensions have been enabled and are visible. Insert the screenshot in the **\_Q1Answers.docx** document. (1)
- 1.3 Create a new folder called **photo\_album**. (1)
- 1.4 Move all image files to the **photo\_album** folder. (2)
- 1.5 Rename the folder **Agenda**, to **Itinerary**. (1)
- 1.6 There is a hidden document in the **Question 1** folder. Adjust the properties of the file so that it will no longer be hidden. (2)
- 1.7 Convert the document **ReviewFormat.docx** to a Word 97-2003 version of the same file name. Do not delete the original Word document. (2)
- 1.8 Extract the contents of **CarHire.zip** into a folder called **CarHire**. (2)
- 1.9 Edit the properties of the file **History.rtf** so that no changes may be made or saved to that file. (1)
- 1.10 How much is the *Bit rate* of the audio file? Type your answer in the **\_Q1Answers.docx** document. (1)
- 1.11 Protect the document **Reviews.docx** with the password **q1w2e3**. (1)

<b>20 marks</b>
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**SECTION B            WORD PROCESSING****QUESTION 2**

Open and work *only* in the folder named **QUESTION 2**.

Open the file **Q2\_TripPlanner.docx**.

- 2.1    Set the top and bottom page margins to 1.5 cm. (1)
- 2.2    Insert automatic page numbering as follows: (1)
  - 2.2.1    Page numbers must only appear from the second page onwards. (1)
  - 2.2.2    The first page number to appear should be '1'. (1)
  - 2.2.3    The page numbers must appear in the footer. (1)
  - 2.2.4    The page numbers must be centred. (1)

*Page 2*

- 2.3    Create a style called **01MainTitle** with the following specifications: (1)
  - 2.3.1    Font size: 22 pt, Colour: Any colour besides black. (1)
  - 2.3.2    Dashed underline. (1)
- 2.4    Apply the style you created in the previous question, to the text 'Trip Planner', located at the top of the page. If you were unable to create a style, then apply the **Heading 1** style to the text instead. (1)
- 2.5    Insert the image **Travel.jpg** at the location indicated by the highlighted text '{Place image here}'. (1)
  - 2.5.1    Resize the image to 9 cm in height. (1)
  - 2.5.2    Centre the image horizontally. (1)
  - 2.5.3    Apply a picture style of your choice to the image. (1)
  - 2.5.4    Insert a caption below the image. The text for the caption is located in the **DocumentSources.txt** file under 'Source 1'. If you did not insert the image, you can still insert the caption under '{Place image here}'. (1)
- 2.6    Format the bulleted list to a different symbol. The symbol must be character 97 from the Webdings font. (2)

*Save and close the document.*

Open the file **Q2\_AboutScotland.docx**.

2.7 Insert an endnote to the heading 'Facts about Scotland'. The endnote text is located in the **DocumentSources.txt** file (Source 2). You may use any numbering format for the endnote. (2)

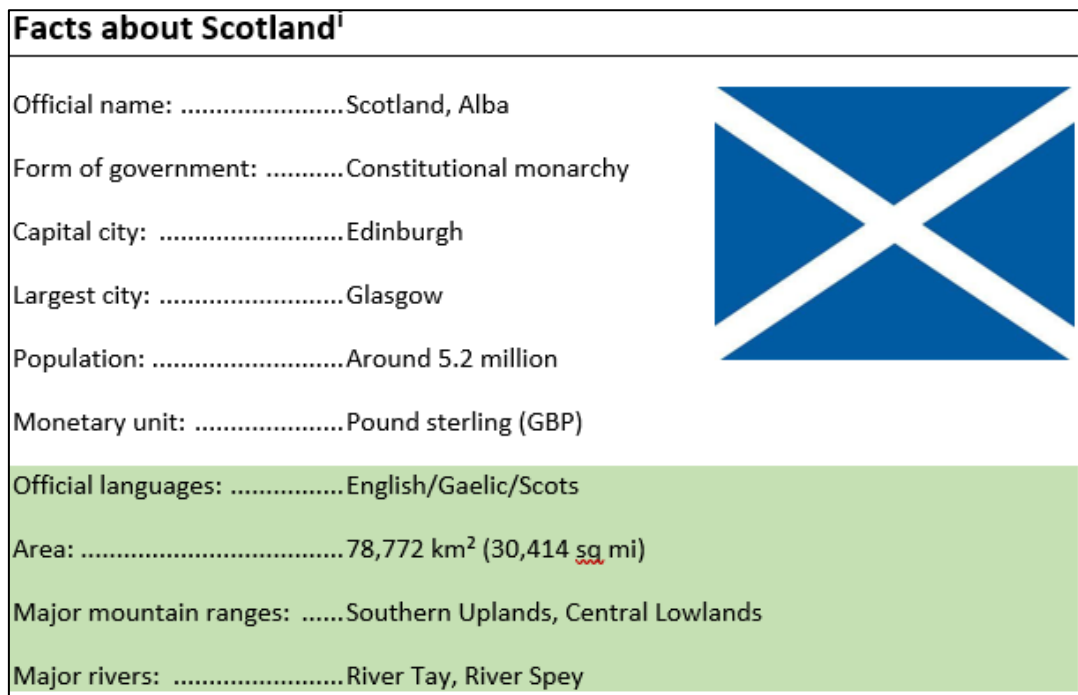
2.8 Adjust the text wrapping features of the image of the Scottish flag so that it appears at the top right of the paragraph, below the 'Facts about Scotland' heading.

See *Figure 1* as an example. (1)

2.9 Format the text with the green shading, underneath the heading 'Facts about Scotland', as follows:

2.9.1 Place a left-aligned tab stop, with a dotted leader, at 5 cm in the line starting with 'Official languages ...' up to and including the line starting with 'Major rivers ...' (2)

2.9.2 Align each fact accordingly. (2)



*Figure 1*

2.10 Format the text 'Did you know?' in red, bold and 14 pt. (1)

2.11 Format the paragraph starting with 'Hundreds of millions...' and ending with '... Greenland!' as follows:

2.11.1 Indent the paragraph to 3 cm from the left. (1)

2.11.2 Place a paragraph border, dashed line, around the paragraph. (2)

2.11.3 Shade the entire paragraph with a colour of your choice, besides white. (1)

- 2.12 Use a feature in Microsoft Word to ensure that the last paragraph in the document is not split up across two pages. (1)

*Save and close the document.*

**[30]**

### QUESTION 3

Open and work *only* in the folder named **QUESTION 3**.

Open the file **Q3\_Food.docx**.

- 3.1 Change the page orientation to landscape. (1)
- 3.2 Use the **Food.jpg** file as a watermark for the document. Scale the watermark to 200%. (2)
- 3.3 Format only the bulleted list as follows:
- 3.3.1 Place the content into THREE columns. (1)
  - 3.3.2 Include a line between each column. (1)
  - 3.3.3 Use an appropriate break to place 'Seafood' at the top of the second column and 'Cullen Skink' at the top of the third column. (1)
- 3.4 Format the text, at the bottom of the document, starting with 'https://...' and ending with 'best-scottish-food/', as follows:
- 3.4.1 Convert the whole URL into a live, clickable URL. (1)
  - 3.4.2 Create screen tip text 'Visit the website for more info' so that the text appears when a user hovers their mouse over the URL. (1)

*Save and close the document.*

Open the file **Q3\_Itinerary.docx**.

3.5 At the top of page 1:

3.5.1 Create a table with ONE row and TWO columns. (1)

3.5.2 Move the map into the left cell and the heading text into the right cell. (1)

See *Figure 2* as an example.



*Figure 2*  
The 'borders' in *Figure 2* are the table gridlines.

3.6 Format the table, below the text 'Itinerary', as follows:

3.6.1 Set the text alignment of all cells to vertically centred and horizontally left. (1)

3.6.2 Remove the top and left border from the empty cell at the top left of the table. (1)

3.6.3 Apply shading of any colour to the top row of the table, excluding the empty cell on the top left. (1)

3.7 Format the table below the heading 'Distances' so that it fits on one page only – including the heading 'Distances' above it. You may NOT change the size of any of the text or the font type. You will be penalised by 1 mark if you change the font size. (2)

3.8 Convert the text, under the heading 'Further Distances', into a table of three columns and thirteen rows. (2)

3.9 Insert the text 'Document last modified:' in the footer of the document AND do the following:

3.9.1 Add an automatically-updating date field, showing the current date in any format, next to the text 'Document last modified:'. (1)

3.9.2 Ensure that the text and date *only* appear on the *last* page of the document. (2)

**[20]**

**50 marks**

**SECTION C          SPREADSHEETS****QUESTION 4**

Open and work *only* in the folder named **QUESTION 4**.

Open the workbook **Q4\_Flights.xlsx**.

*Flights worksheet*

- 4.1 Shade cells **A1:O1** in any appropriate colour. Use the fill pattern style 'Thin Horizontal Stripe'. (1)
- 4.2 Correct the issue that is causing the data to not display properly in **column F**. Do not adjust the font size. (1)
- 4.3 Cell **D21**'s content should read as 028. Format the cell accordingly to display 028. (1)
- 4.4 Format cells **L2:L21** as currency. (1)
- 4.5 Allocate the name 'APTAX' (no quotation marks) to cell **Q2**. (1)
- 4.6 Apply conditional formatting to cells **G2:G21** to show all flights that leave in the evening (any time from 18:00 onwards). Use any formatting of your choice. (2)
- 4.7 Airport tax is calculated as follows:  

$$[\text{CostPerPerson}] \times [\text{Passengers}] \times \text{APTAX}$$
 The tax percentage amount (APTAX) is stored in cell **Q2**.  
 Calculate the Airport Tax for each flight in **column N** from cell **N2** to cell **N21**. (2)
- 4.8 Calculate the total flight amount for all flights in **column O**. The total cost includes the passengers' costs and the airport tax amount. (2)
- 4.9 Determine the most expensive trip from **column O** by using a function, in cell **C23**. (2)
- 4.10 Use a function in cell **C25**, to calculate the average airport tax amount from **column N**. (1)
- 4.11 Use a function in cell **C24** to determine the cheapest trip from **column O**, when referring to the cell range **O2:O21**. (1)
- 4.12 Use a function in cell **D23** to display the name of the airline for the most expensive trip (you should have calculated the most expensive trip in cell **C23** already). (1)
- If you did not calculate anything in cell **C23**, you should still reference cell **C23** in your function/formula. (5)

*Airlines worksheet*

- 4.13 Use a function in cells **B2:B7** to display how many flights are available for each airline listed in **column A**. Use the *Flights* worksheet. (4)
- 4.14 Use a function in cells **C2:C7** to calculate the total cost of all flights per airline listed in **column A**. Use the data located in cells **E1:F11**. (4)
- 4.15 Sort cells **A2:C7** alphabetically according to airline. (2)
- 4.16 Use the *Airlines* worksheet and create an appropriate type of chart, with a suitable heading, illustrating the data from cells **A2:B7**. (2)
  - 4.16.1 Use the image **Flight.jpg** as the background image for the whole chart. (1)
  - 4.16.2 Set the background image to 80% transparency. (1)
  - 4.16.3 Add data labels on the outside of each series. (1)
  - 4.16.4 Move the chart to its own sheet, called **FlightChart**. See *Figure 3* as an example. (2)



*Figure 3*

*Departures worksheet*

- 4.17 Create a drop-down list in cell **A2**. The list should display all the flight numbers from the *Flights* worksheet. (2)
- 4.18 Use a function in cell **B2** to display the departure time of a flight number selected or entered in cell **A2**. If you did not complete Question 4.17, you can test your function by manually typing in a flight number in cell **A2**. (4)

*Save and close the workbook.*

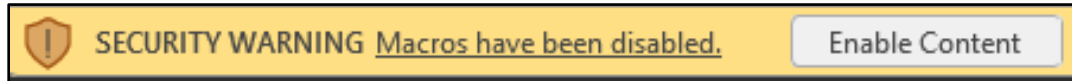
**[43]**

**QUESTION 5**

Open and work *only* in the folder named **QUESTION 5**.

Open the workbook **Q5\_Weather.xlsm**

If you encounter a message such as the one below:



Click '**Enable Content**'.

If you get a message asking if you should make the document a "Trusted Document", you can click **Yes** or **No**. It will not affect the file.

*WeatherScotland worksheet*

- 5.1 Create a macro called **Sunlight**. (1)
- 5.1.1 The macro must sort the table data, descending according to sunlight hours. (1)
- 5.1.2 Create a button, over cell **G1**, labelled 'Sort by sunlight'. (1)
- 5.1.3 Attach the macro to the button so that the macro runs when the button is clicked. (1)

*DataAnalysis worksheet*

- 5.2 Insert a pivot chart (line graph style), based on the provided pivot table. (2)
- 5.3 Adjust the filter of the chart to display only the data for Braemar. (1)

See *Figure 4* on the next page as an example.

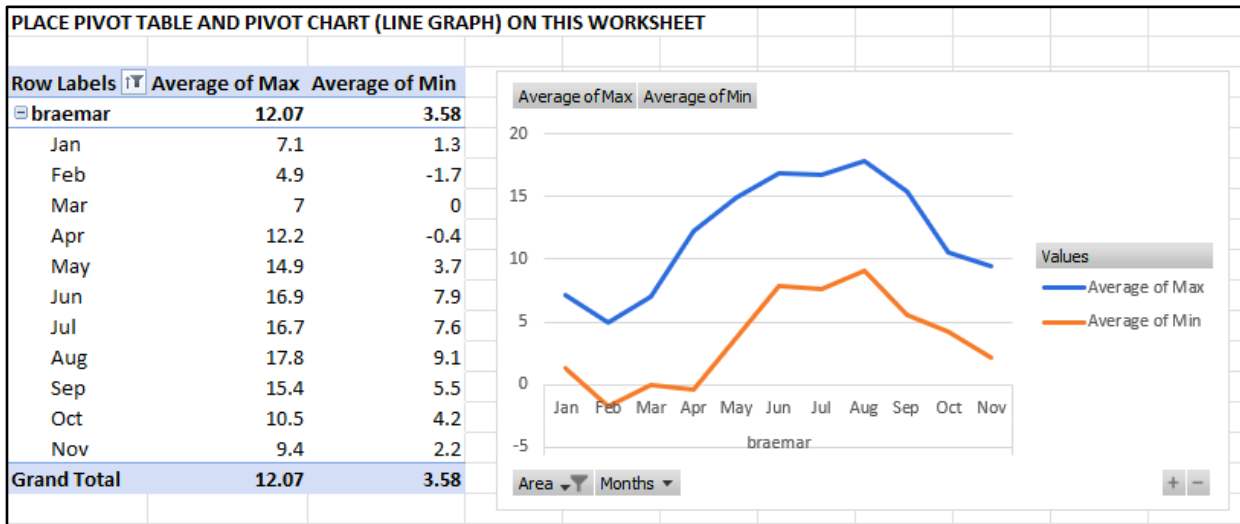


Figure 4

Save and close the workbook.

[7]

**50 marks**

**SECTION D          DATABASE****QUESTION 6**

Open and work *only* in the folder named **QUESTION 6**.

Open the database **Q6\_Accommodation.accdb**

**Tables**

Table: *tbl\_Accommodation*

- 6.1 Create an autonumbering field called ID. (1)
- 6.2 Set the field ID as the primary key for the table. If you were unable to create the field from the previous question, use the most appropriate existing field instead. (1)
- 6.3 Change the field size of Location to 100. (1)
- 6.4 Ensure that Rating is not allowed to be left empty when creating a new record. (1)
- 6.5 Create a rule to only allow numbers between 1 and 5 to be entered in Rating. Also include appropriate text to assist the user. (3)
- 6.6 Apply an appropriate input mask so that any new phone numbers entered will have the following visual format: +44 ( \_\_\_\_ ) \_\_\_\_ \_\_\_\_  
Example: **+44 (123) 456 7890** (2)
- 6.7 Format Type to display a combo box dropdown, consisting of the following options:  
• Bed and Breakfast  
• Self-catering (2)
- 6.8 Change the Data type for Wi-Fi to display a checkbox instead of text. (1)
- 6.9 Append the content from the file **ScotlandAccommodationData.xlsx** to the table. (2)
- 6.10 Sort the table, according to Location, ascending. Take a screenshot of the sorted data and insert it into the **Q6\_Screenshot.docx** file. Include only the table name tab, ID, PlaceName and Location columns in the screenshot. (2)
- 6.11 Filter the table data to display all locations in Edinburgh that have a rating of 4 or higher. Take a screenshot of the filtered data and insert it into the **Q6\_Screenshot.docx** file. Include only the table name tab, ID, PlaceName, Location and Rating columns in the screenshot. (2)

*Save and close tbl\_Accommodation.*

## Queries

- 6.12 Create a query showing all the accommodation available with a rating of 4 or higher. Display PlaceName, Location, Rating and Email. Sort the results, descending, by Rating. Save the query as *qry1\_HighRatings*. (3)
- 6.13 Create a query which will return all self-catering accommodations that have Wi-Fi as well as parking facilities. Any locations in Glasgow must not be included. The query must display the PlaceName, Location and Phone. Save the query as *qry2\_WifiParking*. (5)
- 6.14 Open *qry3\_Discount*. Create a new field called Discounted which will calculate and display a new tariff amount in rands, after a 25% discount has been applied. Show PlaceName, Location, Rands and Discounted fields. (3)

## Forms

- 6.15 Create a form called *frm\_DataEntry*. Include all fields. (1)
- 6.16 Change the text in the form header to 'Data Entry'. No quotation marks. (1)
- 6.17 Insert a button in the form header that will navigate to the next record when clicked. (2)

## Reports

- 6.18 Create a report, *rpt\_Areas* with the fields PlaceName, Tariffs and Address. The report must be grouped according to Location. (2)
- 6.19 Adjust all necessary field sizes to ensure full visibility of all data in the report. (1)
- 6.20 Insert a group footer as follows:
- 6.20.1 Use a function to calculate the average Tariff amount for each area. (3)
- 6.20.2 The average amount should be followed by 'GBP' to represent UK currency.

Example: 

Average Tariff for this area	210.5 GBP
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 (1)

Save and close the database.

**40 marks**

**SECTION E            WEB DEVELOPMENT (HTML DESIGN)****QUESTION 7**

Open and work *only* in the folder named **QUESTION 7**.

Open the file *index.html*.

- 7.1    Insert the text 'Our trip to Scotland' as the title of the document. (1)
- 7.2    Set the background colour of the entire document to #16233C. (1)
- 7.3    Format the text 'The Land of Haggis and Happiness' with a Heading 2 tag. (1)
- 7.4    Set the main font size of all the content to size 4. (2)
- 7.5    Underline the heading 'Frank and Godwin's Overseas Journey 2023'. (1)
- 7.6    Italicise the word '*really*', in the sentence 'We are really hoping to visit Edinburgh Castle.' (1)
- 7.7    Insert the image **EdinburghCastle.jpg** after the `<HR/>` tag.
- 7.7.1    The image size must be 250 pixels in height and 400 pixels in width. (1)
- 7.7.2    The image must be aligned to the right. (1)
- 7.7.3    The image must have a border of size 4. (1)
- 7.7.4    The text 'Edinburgh Castle' should appear when the mouse hovers over the image. (1)
- 7.8    Correctly convert the text 'www.travelblogs.com/fg2023' into a hyperlink linking to that given URL. (2)
- 7.9    Set the colour of the hypertext (from the previous question) to red. If you did not create a hyperlink, then format the text *www.travelblogs.com/fg2023* instead. (1)
- 7.10   Format the points starting with 'Check the visas ...' up to '... know we're overseas.' as a bulleted list. (2)
- 7.11   Set the font face of the text 'FOLLOW OUR BLOG FOR REGULAR UPDATES!' to Arial. (2)
- 7.12   Centre-align the last paragraph in the document, located at the bottom of the page. (2)

*Save and close the file.*

<b>20 marks</b>
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**Total: 180 marks**