





COMPUTER APPLICATIONS TECHNOLOGY: PAPER I

Time: 3 hours

180 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. Before you begin, rename your Data Files folder to *your* examination number.
E.g.:  **Data Files** becomes  **1234567890**.
2. This question paper consists of 17 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.
3. The examination consists of 5 sections and 9 questions. All questions in all sections must be answered.
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. 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.
8. Screenshots should be appropriately cropped to display all relevant information only.
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, if available, 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 instructed to do so.
12. Do NOT rename any files or folders unless instructed to do so.
13. Do NOT create any folders or sub-folders unless instructed to do so.
14. Do NOT delete, move or duplicate any files or folders unless instructed to do so.
15. 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 sub-folders are as follows:

Data Files	Q1	Q1 subfolders
<ul style="list-style-type: none"> Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Student_Screenshots.docx 	<ul style="list-style-type: none"> Documents Medias Project BrochureTemplate.jpg Connections.mp4 Draft.docx ICTP.webp Names.rtf SignIn.mp3 SyntaxBanner.png Templates.docx 	<p>Documents folder</p> <ul style="list-style-type: none"> Images.zip <p>Medias folder (Empty)</p> <p>Project folder</p> <ul style="list-style-type: none"> 89301.docx 1144503.docx 74863502.docx
Q2	Q3	Q4
<ul style="list-style-type: none"> Q2AI.docx 	<ul style="list-style-type: none"> Q3ReportA.docx 	<ul style="list-style-type: none"> DataToMerge.xlsx Q4Graph.xlsx Q4MailTemplate.docx Q4ReportB.docx sources.txt
Q5	Q6	Q7
<ul style="list-style-type: none"> Q5Syntax.xlsx 	<ul style="list-style-type: none"> Q6NewEmployees.xlsx 	<ul style="list-style-type: none"> Q7UKDivision.xlsx
Q8	Q9	Q9 images subfolder
<ul style="list-style-type: none"> SyntaxBanner.png SyntaxDB.accdb 	<ul style="list-style-type: none"> images contact.html index.html 	<p>images folder</p> <ul style="list-style-type: none"> Banner.png

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

Syntax Solutions is a cutting-edge IT company specialising in the fields of information technology and artificial intelligence. They have employees worldwide and manage all data from their central location in the USA.



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

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

- 1.1 Rename the folder **Medias** to **Media Assets**. (1)
- 1.2 Move all image, audio and video files into the **Media Assets** folder. (3)
- 1.3 Compress the file **Names.rtf** into a file with the same name. (1)
- 1.4 Add the author name, *John Collins*, to the **Templates** document. (2)

Open the **Documents** sub folder.

- 1.5 Extract the **Images.zip** file. (1)

Return to the Q1 folder.

Open and work in the **Project** folder.

Ensure the File Explorer window is displaying the content in *Details* view.

- 1.6 Add a column, *Comments*, to the window. (1)
- 1.7 Sort all the contents of the **Project** folder, according to *Comments*, ascending. If you were unable to complete Question 1.6, then sort by *Name*. (2)
- 1.8 Enable the **Preview pane**. (1)
- 1.9 Take a screenshot of the entire File Explorer window. (1)
- 1.10 Save the screenshot as a **PNG** (or **JPG**) file called **Preview.png**. Ensure the *Comments* column is included in the screenshot. If you are unable to create a PNG or JPG file, insert the screenshot into a Word document and save the document as **Screenshot.docx**. (1)

Return to the Q1 folder.

- 1.11 Create a copy of the document **Draft**. Leave the default naming of the file as suggested by Windows. (1)
- 1.12 Determine the Album Artist of the audio file **SignIn.mp3**. Create a new text document with the same name as the album artist. (2)
- 1.13 Investigate what date the file, **Names.rtf**, was last modified. Fill in the answer in the allocated space in the **Names.rtf** file. (2)
- 1.14 Create a shortcut to the **Project** folder. Place the shortcut in the **Q1** folder. (1)

20 marks

SECTION B WORD PROCESSING**QUESTION 2**

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

Open the document **Q2AI**.

- 2.1 Adjust the size of the heading 'When Will Robots Take Our Jobs?' as follows:
- 2.1.1 Font size must be 23.5. (1)
- 2.1.2 Font must be *bold*. (1)
- 2.2 Change the font colour of the first paragraph starting with 'An artificial intelligence explosion ...' and ending with '... or won't?' to any colour of your choice, other than the default colour. (1)
- 2.3 Set the text alignment of all paragraphs in the document to *Justify*. (1)
- 2.4 Locate the image further down on page 1 and set the text-wrap option to *Top and Bottom*. (1)
- 2.5 Place the image between the two paragraphs as illustrated in **Figure 1** below. (1)

'The people who have skills, who have training, they can get a job,' says Lionel P. Robert Jr., a professor at the University of Michigan Robotics Institute. 'The people at the low end – when those jobs go away, they just have less options to find another job.'



As everyone knows, the supply chain is under tremendous pressure with a boom in consumer spending. E-commerce exploded as the pandemic lockdowns set in, and it continues to grow rapidly (up 14,2% from 2020 to 2021). Demand is accelerating the deployment of already advanced robots, and nowhere are the prospects for automation stronger than in two particular sectors: warehousing and trucking.

Figure 1

- 2.6 Locate the three sub-headings highlighted in yellow and apply the style called **SUBHEADING** to them. (1)
- 2.7 Modify the style **SUBHEADING** so that the font size is 14 pt. (1)
- 2.8 Place a footnote at the end of the text 'This article has been adapted.' The footnote must read: *<https://www.fastcompany.com/when-will-robots-take-our-jobs>*. (2)

Save and close the document.

10 marks

QUESTION 3

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

Open the document **Q3ReportA**.

Page 1

3.1 Adjust the top margin of the document to 1.75 cm. (1)

3.2 Apply a top and bottom paragraph border to the text '2022 REPORT'. (1)

Page 2

3.3 Insert the text 'SYNTAX SOLUTIONS REPORT 2022' in the header. (1)

3.4 The header text must not display on page 1 of the document. (1)

3.5 Insert an automatic page number in the footer. (1)

3.6 Ensure that *all* pages in the document, from page 2 onwards, are numbered. (2)

3.7 Page numbering must start at number 1. (1)

3.8 Format the text starting with 'Claire Nguyen' and ending with 'Chief Data Officer' into two columns. See **Figure 2** as an example. (1)

Claire Nguyen <i>CEO</i>	Emily Davis <i>Head of Marketing</i>
Alex Kim <i>CTO</i>	David Wilson <i>Head of Support</i>
Robert Johnson <i>COO</i>	Jessica Taylor <i>Head of HR</i>
Sarah Lee <i>CFO</i>	Brian Anderson <i>Chief Security Officer</i>
Michael Brown <i>Head of Development</i>	Karen Chen <i>Chief Data Officer</i>

Figure 2

3.9 Use an appropriate break so that 'Emily Davis' will always appear at the top of the second column. (1)

- 3.10 Indent the paragraph with the quotation by Steve Jobs by 3.5 cm from the left and 3 cm from the right. It should display as shown in **Figure 3**. (2)

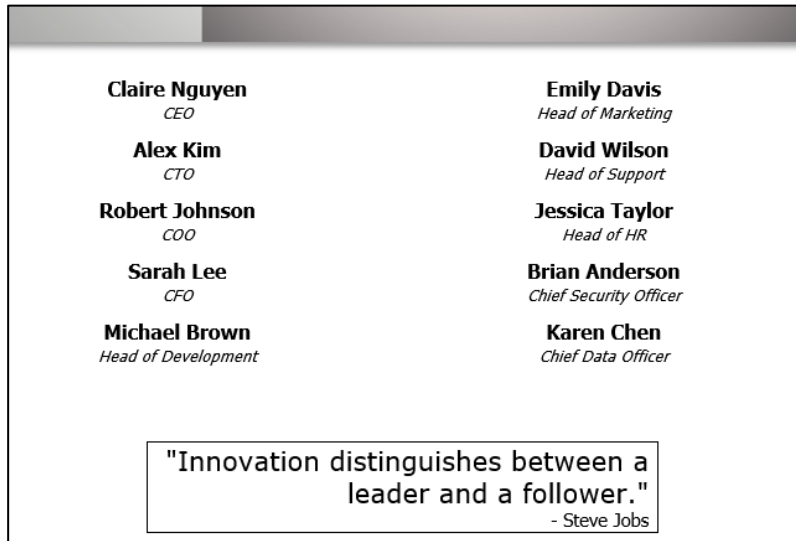


Figure 3

Page 3

- 3.11 Edit the automatic table of contents to display only the headings that have been formatted with the **ReportSubs** style. (2)

Page 4

- 3.12 Adjust the line spacing of the paragraph beginning with 'Syntax Solutions is a ...' and ending with '... and AI needs.' to 1.5. (1)
- 3.13 Locate the text 'cloud computing', which has been highlighted in yellow, and convert it into a URL linking to 'http://www.syntaxsol.com/cloud_computing'. (2)
- 3.14 Apply ScreenTip text to the link created in Question 3.13. The text must read 'See our cloud computing options'. (1)

Page 5

- 3.15 Starting at 'Customer service', format the entire list given as follows: (3)
- 3.15.1 Level 1 formatting a number in bold, e.g. **1**)
 - 3.15.2 Level 2 formatting is roman numeral, e.g. **i**)
 - 3.15.3 Level 3 formatting is a symbol **●**

The list begins with 'Customer service' and ends with '... evolving fraud threats.' See **Figure 4** as an example showing all three formatted levels for the first point.

1) Customer service

- i) AI-powered chatbots
 - AI chatbots can handle common customer inquiries and support requests 24/7, improving customer experience and freeing up human representatives to handle more complex issues. The chatbots can be trained to respond to specific questions and provide personalized answers, improving customer satisfaction.
- ii) Sentiment analysis
 - AI algorithms can analyze customer feedback and support requests to understand the overall sentiment and identify areas for improvement. This can help companies to make data-driven decisions and improve customer satisfaction.

Figure 4

Save and close the document.

21 marks

QUESTION 4

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

Open the document **Q4ReportB**.

Page 4

- 4.1 Locate the heading 'Outlook' at the top of the fourth page. Create a bookmark called 'outlook' using the heading text. (1)

Page 1

- 4.2 Convert the text 'This outlook remains positive.' located on page 1, into a hyperlink, linking to the bookmark you created in Question 4.1. If you were unable to create a bookmark in the previous question, link to the text to 'Our Outlook' which has been formatted with Heading 1. (1)
- 4.3 Insert the chart from the **Q4Graph** workbook as a linked object, on the text '{insert chart as linked object here}' (remove the text once the link was inserted). (3)

Page 3

- 4.4 Adjust the orientation of the third page (containing the graph and table) to display in landscape orientation. All other pages must remain in portrait orientation. (3)

Page 6

- 4.5 Use the information on this page to add a source to the *Source Manager* of Word. (1)

Whole document

- 4.6 Change all occurrences of the phrase 'Syntax Solutions' to 'SS'. (2)

Save and close the document.

Mail merge

Open the document **Q4MailTemplate**.

Syntax Solutions are giving all the managers in the marketing department a bonus. A template has been created to complete a mail merge to notify all the relevant managers.

- 4.7 Use the provided **DataToMerge** workbook to insert the four fields into the letter. (2)
- 4.8 Edit the recipients so that the letter will only be sent to managers in the Marketing department. (3)
- 4.9 Complete the merge and save the completed merge document as **Q4Letters**. (2)

18 marks

SECTION C SPREADSHEETS**QUESTION 5**

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

Open the workbook **Q5Syntax**.

Worksheet: *Sheet 1*

The data for calculations can be referenced from the **Employees** worksheet.

- 5.1 Rename the worksheet from **Sheet1** to **Information**. (1)
- 5.2 Set the height of **Row 1** to 123 pixels (73.80 pts). (2)
- 5.3 Merge and center cells **B1:F1**. (1)
- 5.4 Calculate the total amount of all salaries paid globally, in cell **C2**. Make use of an appropriate function to do so. (2)
- 5.5 Use a function in cell **C3** to calculate the total number of employees working for the company. (2)
- 5.6 How many employees do not have an Age field filled in? Determine the answer by means of a function in cell **C4**. (2)
- 5.7 How old is the oldest employee? Use a function to display the answer in cell **C5**. (2)
- 5.8 Determine the average percentage, using a function in cell **C6**, of the bonus percentage paid. (2)
- 5.9 Calculate the total amount of annual salaries paid to United States employees. Use a function in cell **C7** to display your answer. (4)
- 5.10 Work out, by means of a function, the total number of employees based in Berlin (as indicated in cell **E3**), in cell **F3**. Copy this down correctly to cell **F4** so that it works for Hamburg as well. (3)

Save and close the workbook.

21 marks

QUESTION 6

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

Open the workbook **Q6NewEmployees**.

Worksheet: AccessCodes

6.1 Turn off gridlines from displaying on this worksheet. (1)

6.2 Create an access code for each employee in **Column C**. Each access code is created from the following structure:

- The first two characters of the employee's ID.
- The last three numbers of the employee's ID.
- The first letter of the employee's full name.
- A random number between 10 and 100.
- The entire code is lowercase.

Example of an Employee Access code e0099g88 (5)

Worksheet: Lookup

6.3 Use data validation to create a drop-down list in cell **B3**. The list must display all the ID's located in **Column A** from the *AccessCodes* worksheet. (2)

6.4 Make use of a function, in cell **C3**, that will return the name of an employee based on whichever ID has been selected in cell **B3**. (4)

6.5 Shade cells **B2:C2** using any gradient fill. (2)

Save and close the workbook.

14 marks

QUESTION 7

Open and work only in the folder named **Q7**.

Open the workbook **Q7UKDivision**.

Worksheet: *Employees*

- 7.1 Correct the issue causing **Column F** displaying the # symbol. (1)
- 7.2 Format cells **G2:G9** to display in short date format. (1)
- 7.3 Calculate the total number of years, in **cells H2:H9**, based on their hire and exit dates. The figure must display as a whole number with no decimals. (3)
- 7.4 Display in **Column I**, the word 'Yes' if an employee has worked for more than 2 years for the company, otherwise, display the word 'No'. Answer this question even if you were not able to answer Question 7.3. (3)
- 7.5 Name the range **A1:J53** as **UKDivision**. (1)

Worksheet: *Sales*

- 7.6 Insert a pivot table. The table must display the following details/values: (4)
- 7.6.1 Department.
 - 7.6.2 Business unit within each department.
 - 7.6.3 The names of the employees in each department.
 - 7.6.4 The number of people in each department/business unit.
- 7.7 For the Sales department, also display the sum of sales secured for each business unit and employee working in Sales. (1)
- 7.8 The sales figures should display as US dollars (\$). (1)

See **Figure 5** on the next page for an excerpt example of the table.

	A	B	C
3	Row Labels	Count of Business Unit	Sum of Sales secured
4	Finance		1
5	Manufacturing		1
6	Jaxson Coleman		1
7	Human Resources		13
8	Corporate		1
9	Connor Joseph		1
10	Manufacturing		4
11	Dylan Padilla		1
12	Ethan Clark		1
13	Everleigh Espinoza		1
14	Isaac Sanders		1
15	Research & Development		4
16	Eleanor Li		1
17	Jaxson Mai		1
18	Matthew Chau		1
19	Skylar Doan		1
20	Speciality Products		4
21	Andrew Huynh		1
22	Christian Sanders		1
23	Everly Walker		1
24	Scarlett Figueroa		1
25	IT		18
26	Corporate		4
27	Benjamin Mai		1
28	Grayson Turner		1
29	Miles Thao		1
30	Sophie Oh		1

Figure 5

Worksheet: HighestSales

- 7.9 Create a column chart using the data presented in the pivot table on this worksheet. (1)
- 7.10 Add data labels to each column. (1)
- 7.11 Edit the chart heading to display as 'Sales people figures' (no quotations). (1)

Save and close the workbook.

18 marks

SECTION D DATABASE

QUESTION 8

Open and work only in the folder named **Q8**.

Open the database **SyntaxDB**.

Tables

Table: tbl_Employees

8.1 Change the properties of the fields contained in this table as indicated below:

Field	What to change	
<u>FullName</u>	Field size must be 45 characters.	(1)
<u>Department</u>	Convert to a Combo box containing the following items: Accounting Engineering Finance Human Resources IT Marketing Sales	(2)
<u>HireDate</u>	This field may not be left empty.	(1)
<u>Bonus</u>	Set a default value of 0.1	(1)

8.2 Add a rule so that a user cannot enter a value of more than **0.12** in the bonus field. Provide an appropriate validation message. (2)

8.3 Ensure that the field IntContact displays contact phone numbers in the following format: **+873(1)xx-xxxx**. The letter x represents where any number is allowed to be entered. (2)

Save and close the table.

Forms

8.4 Create a new form called **frm1-Locations**. (1)

8.4.1 The form must display the fields FullName, JobTitle, Department, BusinessUnit, Country and City from tbl_Employees. (1)

8.4.2 Insert a search button in the header of the form that will open up a Search dialog box when clicked. (2)

Save and close the form.

8.5 Open the form **frm2-Employees** and edit as follows:

Form Header section

8.5.1 Change the title of the form to 'Employees'. (1)

8.5.2 Change the background colour to any colour other than the default. (1)

Detail section

8.5.3 Insert the image **SyntaxBanner.png**, located in the **Q8** folder, below the form fields. See **Figure 6** as an example of size and placement. (2)



Figure 6

8.5.4 Change the tab order of the fields so that Rating is the first field activated. (1)

Save and close the form.

8.6 Insert a hyperlink on the **Menu** form which will open the form **frm2-Employees** when clicked. (1)

Save and close the form.

Reports

8.7 Create a report, from *tbl_Employees*, called **rpt1-CountriesCities** including the fields Country, City, FullName and JobTitle. (1)

8.8 Sort the report, descending, according to Country. (1)

Save and close the report.

- 8.9 Create a report, from *tbl_Employees*, called **rpt2-DepartmentsCountries** with the fields Country, Department and FullName.
- 8.9.1 Group the report by Country. (1)
- 8.9.2 Type your exam number in the footer of the report. Use a label, not a text box. (1)

Save and close the report.

Open the report **rpt3-Salaries**.

- 8.10 A field has been added to the page header section, called SARands. Calculate, in the corresponding box in the Detail section, the annual salary amount in South African rands. Assume the exchange rate is R20 to 1\$. (1)
- 8.11 Create a footer section for the **Department** group. (1)
- 8.12 In the **Department** footer, provide a calculation to display the number of employees in each department. (2)

Save and close the report.

Queries

- 8.13 Create a query called **qry1-HighRatings**. Use both database tables. (1)
- 8.13.1 Include the fields Department, FullName and Rating. (1)
- 8.13.2 Sort, ascending, according to Department. (1)
- 8.13.3 The query must display all employees with a rating of 49 and above. (1)

Save and close the query.

Open the query called **qry2-MissingAges**.

- 8.14 Add the necessary criteria so that the query displays only corporate employees who are missing an age entry in their records. (3)

Save and close the query.

Open the query **qry3-NewBonus**.

- 8.15 Employees who have a rating of 50 are eligible for a bonus increase of 5%. Create a new field called NewBonus to calculate each employee's new bonus amount. (3)

Save and close the query.

Open the query **qry4-ReleaseLetters**.

- 8.16 The query must display all employees hired between 1992 and 1998. (3)

Save and close the query.

40 marks

SECTION E HTML

QUESTION 9

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

Open the file **index.html** and edit with a text-based editor.

- 9.1 Give web document a title: 'Syntax Solutions: Welcome'. (No quotations). (2)
- 9.2 Set the body background to **grey**. (2)
- 9.3 Locate the **** tag and update it to show the image **Banner.png**, located in the **images** subfolder. (2)
- 9.4 Set the width of the image **Banner.png** to 600 px and the height to 300 px. (1)
- 9.5 Format the text 'Syntax Solutions', located underneath the image, to display with a heading size of 1. (1)
- 9.6 Insert a line after the text 'Client Login page'. (1)
- 9.7 Format the text beginning with 'Select an option ...' and ending with '... service before.' as a paragraph. (1)
- 9.8 Format the word 'register', located in the paragraph, to display as bold text. (1)
- 9.9 The list, beginning with the word 'Login', has not been correctly marked up with HTML tags. Correct it by adding the missing tags. (2)
- 9.10 Adjust the font size of the word 'Contact', located at the bottom of the page, to 5. (2)
- 9.11 Convert the text 'Contact', at the bottom of the page, to a hyperlink which will open the page **contact** when clicked. (2)

Save and close index.html

Open the file **contact.html** and edit with a text-based editor.

- 9.12 Correct the last row of the table so that the text '© 2023 Syntax Solutions' displays across all three columns. See **Figure 7** as an example. (1)

Contact Department	Number	Email
Jordan Lee	(849) 613-2739	jordan.lee@syntax.com
Casey Davis	(291) 838-4178	casey.davis@syntax.com
Taylor James	(482) 738-9214	taylor.james@syntax.com
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Figure 7

Save and close contact.html

18 marks

Total: 180 marks