Instructions and information

1. This question paper consists of three sections: Section A (25 marks), Section B (75 marks) and Section C – the integrated scenario (50 marks).

2. Answer all the questions.

3. Read the questions carefully, taking note of the mark allocations. In general, one mark is allocated per fact. A two mark question would therefore require two facts, and so on.

4. Number the answers according to the numbering system used in this question paper.

5. Leave a blank line after each sub-question.

SECTION A

Question 1

Identify the correct answer for each question. Write down only the number of each question, and next to it the single capital letter which represents the best answer, for example 1.11 A.

1.1 Which one of the following devices would NOT be used by a person who suffers from poor motor control?
   A. Head movement device
   B. Braille keyboard
   C. Joystick
   D. Large trackball
   (1)

1.2 Which one of the following can you NOT do when saving a document in Word?
   A. Change the folder in which the document is stored.
   B. Set a password required to open the document.
   C. Set the default printer that will be used to print the document.
   D. Maintain compatibility with previous versions of Word.
   (1)

1.3 Which one of the following is NOT directly associated with scanners or scanning in general?
   A. GUI
   B. Biometric input
   C. OCR
   D. QR code
   (1)

1.4 The colour depth setting of a scanner is measured in ...
   A. dpi
   B. bytes
   C. pixels
   D. bits
   (1)
1.5 Which one of the following allows you to speak to many people at the same time using conference call technology?  
A. HTTP  
B. iBurst  
C. SETI  
D. VoIP  

1.6 Which one of the following field properties in Access reduces the amount of typing required when new records are entered?  
A. Default value  
B. Validation Rule  
C. Input Mask  
D. Field size  

1.7 Which one of the following types of malware is associated with Bitcoin as a means of payment?  
A. Adware  
B. Spyware  
C. Ransomware  
D. Pharming  

1.8 Which one of the following is a specification of an input device?  
A. 64GB  
B. 4K  
C. 1200 dpi  
D. DDR3  

1.9 With which Excel function, in the list below, could the following set of values (arguments) be used?  
(C2,$F$1:$G$5,2,TRUE)  
A. POWER  
B. VLOOKUP  
C. MEDIAN  
D. SUMIFS  

1.10 Which one of the following is NEITHER an input device NOR an output device?  
A. Data projector  
B. Fingerprint scanner  
C. Blu-ray disc  
D. Touch pad
Question 2

Write down only the number of the description from Column A, and next to it the correct matching capital letter from Column B, for example 2.11 T.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 An example of malware</td>
<td>A. Core</td>
</tr>
<tr>
<td>2.2 A term that refers to the ability of two different software applications to read and use each other’s data</td>
<td>B. 16:9</td>
</tr>
<tr>
<td>2.3 A term given to the last line of a paragraph ‘left by itself’ at the top of the next page</td>
<td>C. 802.11</td>
</tr>
<tr>
<td>2.4 A technology associated with cellular communications</td>
<td>D. Patching</td>
</tr>
<tr>
<td>2.5 A voice-enabled assistant</td>
<td>E. iOS</td>
</tr>
<tr>
<td>2.6 The process of replacing an older version of software with a newer version</td>
<td>F. Hanging indent</td>
</tr>
<tr>
<td>2.7 The unit in which printing speed is measured</td>
<td>G. Bot</td>
</tr>
<tr>
<td>2.8 A specification associated with monitors</td>
<td>H. MP</td>
</tr>
<tr>
<td>2.9 An Excel function used to convert a string to a number</td>
<td>I. Trojan</td>
</tr>
<tr>
<td>2.10 A term for an infected computer that can be controlled remotely when connected to the internet</td>
<td>J. Driver</td>
</tr>
<tr>
<td></td>
<td>K. ppm</td>
</tr>
<tr>
<td></td>
<td>L. MS</td>
</tr>
<tr>
<td></td>
<td>M. Siri</td>
</tr>
<tr>
<td></td>
<td>N. Value</td>
</tr>
<tr>
<td></td>
<td>O. Compatibility</td>
</tr>
<tr>
<td></td>
<td>P. Orphan</td>
</tr>
<tr>
<td></td>
<td>Q. Concatenate</td>
</tr>
<tr>
<td></td>
<td>R. LTE</td>
</tr>
<tr>
<td></td>
<td>S. Upgrading</td>
</tr>
</tbody>
</table>

Question 3

State whether each of the following statements is TRUE or FALSE.

If the statement is FALSE, then write down the word ‘False’ and, next to it, the word(s) which should replace the underlined word(s) to make the statement TRUE. (Note that no marks will be awarded if ‘False’ is given without a suggested replacement.)

**Example 1:** A printer is an example of an **output** device.

Answer: True

**Example 2:** A printer is an example of **software**.

Answer: False – hardware.

3.1 **Throttling** is a technique whereby more critical internet services such as email are given preference, at the expense of non-critical services such as online gaming.
3.2 Augmented reality takes the physical world and adds objects like graphics within the real world – as in the game Pokémon GO. (1)

3.3 A SOHO user typically runs a small business from home. (1)

3.4 Internet of Objects is the trend whereby more and more devices and objects are being connected to one another via the internet. (1)

3.5 Laser printers allow one to create physical objects from designs created on a computer. (1)

SECTION B

Question 4: System Technologies

4.1 Consider the following specifications for a computer and answer the questions that follow:

<table>
<thead>
<tr>
<th>Windows 10 Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel Core i5</td>
</tr>
<tr>
<td>15.6&quot; screen (1920 x 1080)</td>
</tr>
<tr>
<td>256 GB SSD</td>
</tr>
<tr>
<td>No optical drive</td>
</tr>
<tr>
<td>3 x USB ports</td>
</tr>
<tr>
<td>HDMI port</td>
</tr>
<tr>
<td>802.11 b/g/n</td>
</tr>
<tr>
<td>SD Card Reader</td>
</tr>
<tr>
<td>6-Cell battery</td>
</tr>
<tr>
<td>Fingerprint reader</td>
</tr>
</tbody>
</table>

4.1.1 What general term is given to the type of system software, of which Windows 10 Home is an example? (1)

4.1.2 Give the resolution of the screen, and state the unit in which this is measured. (2)

4.1.3 Give TWO advantages of a solid state drive (SSD) over a traditional hard drive, besides speed. (2)

4.1.4 Explain why this particular SSD would not be suitable as a main storage device for a video editor. Also suggest how this problem might be overcome – without replacing the SSD or using a different computer. (2)

4.1.5 Suppose a user wished to transfer data from a DVD to this computer’s SSD. Explain how the user could do this. (2)

4.1.6 Four USB ports are specified. Of these, the newer USB Type C has certain advantages over the other three ports, and is physically smaller than the other ports. Why are some of the older type ports specified as well? (1)

4.1.7 Name a device that would typically connect to the HDMI port. (1)
4.1.8 What does the 802.11 b/g/n specification allow one to do with this computer? (1)

4.1.9 Name the input technology associated with the use of the fingerprint reader, and state what the fingerprint reader would most likely be used for in this scenario. (2)

4.2 Give ONE way to try to solve the problem of a wired mouse that is not responding, without using a different mouse or rebooting the computer. (1)

4.3 Explain, with reference to the concept of convergence, why an MP3 player is NOT a good example of convergence. (2)

4.4 Give TWO reasons why one would choose to use a flash drive to transfer data, rather than optical media (CD or DVD), besides issues relating to cost or the physical size of the media. (2)

4.5 Give ONE advantage of using internet banking at home to perform financial transactions, as opposed to physically visiting the bank – besides speed and 24/7 convenience. (2)

4.6 Computer programs are generally not upwards/forwards compatible.

4.6.1 What problem generally arises as a result of this incompatibility? (1)

4.6.2 Suggest ONE way in which to overcome this problem. (1)

4.7 Explain the general advantage of desktops compared to laptops, in terms of meeting the system requirements for software. (1)

4.8 Give TWO general limitations of using training software (e.g. a Math Training program), compared to ‘normal’ teacher-led training, besides any issues relating to cost or access to a computer. (2)

Question 5: Internet and Network Technologies

5.1 An advertisement for an internet connection package is as follows:

<table>
<thead>
<tr>
<th>Maximum download speed</th>
<th>Maximum upload speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Mbps</td>
<td>1 Mbps</td>
</tr>
</tbody>
</table>

Why is less bandwidth allocated for uploading than for downloading? (1)

5.2 Give TWO general limitations of the ADSL connection type, besides the fact that upload speeds are slower than download speeds, and that ADSL cables are sometimes stolen. (2)

5.3 Name the wired connection type that has started to replace ADSL, and give ONE advantage of this new connection type compared to ADSL, besides speed. (2)
5.4 Give the main limitation of using WiFi to connect to the internet on a smartphone, as opposed to using a cellular connection such as 3G. (1)

5.5 Explain why it is generally slower to make a connection to the internet using a laptop (especially when one is ‘on the go’), than using a mobile device such as a smartphone or a tablet. (2)

5.6 Give TWO disadvantages of using real-time messaging. (2)

5.7 Give TWO reasons why one might wish to disable video when making a Skype call. (2)

5.8 Cloud computing is changing the way we work with information.
   5.8.1 Briefly explain what cloud computing is. (2)
   5.8.2 Why would the use of cloud computing potentially save on costs? (1)

Question 6: Information Management

6.1 Consider the following two questions (labelled A and B) that formed part of an electronic questionnaire created to obtain information on the use of portable devices by learners, and answer the questions that follow:

A: Which of the following devices do you use?
   - Smartphone
   - Tablet
   - Laptop

B: What is your opinion on the use of smartphones by learners during lessons?
   Click or tap here to enter text

6.1.1 Give ONE criticism of EACH of the two questions, in terms of the quality of information that is likely to be obtained. (2)

6.1.2 Explain why Question A is a closed question. (1)
6.2 Consider the extract below of a text file that contains information about learners and their favourite social networking sites.

The contents of this file needs to be imported into a new table in a database.

Answer the questions below the extract.

<table>
<thead>
<tr>
<th>Learner,Gender,Age,Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keenan Pulse 12,Male,17,Facebook</td>
</tr>
<tr>
<td>Shareef Abrahams 11,Male,16,WhatsApp</td>
</tr>
<tr>
<td>Ronel Hoedemaker 12,Female,17,Instagram</td>
</tr>
<tr>
<td>Kevin Masombu 10,Male,15,WhatsApp</td>
</tr>
<tr>
<td>Thandi Gqomfa 11,Female,16,Facebook</td>
</tr>
</tbody>
</table>

6.2.1 How many fields will the table contain, once the data (as shown above) is imported?  
Note: Assume that a Primary Key will NOT be added.  

6.2.2 Once the data is imported, the names and grades will be stored in a single field (e.g. ‘Keenan Pulse 12’ will be in one field). Explain why it would be desirable to store the grades in a separate field.  

6.2.3 Outline a procedure one could follow to separate the grades from the names and surnames by using a spreadsheet, and store this in a field by itself, without changing any data manually.  
Note: It is not necessary to give the actual mouse clicks required.  

6.2.4 Assume that the data has been successfully imported into a table called Import. Describe in your own words the information that the following query (shown here in Design View) will produce:
Question 7: Social Implications

7.1 Give TWO reasons why many companies and organisations ban the use of portable media such as flash drives on their computers, besides any issues relating to loss in productivity. (2)

7.2 Explain how printing at a lower resolution helps to promote green computing. (1)

7.3 Give ONE way in which drop-down lists and check boxes improve the quality of data. (1)

7.4 How can you minimise the risk of becoming a victim of card-skimming theft, when paying for an item or service with your credit card, e.g. at a restaurant? (1)

7.5 Study the content of the e-mail message shown below and answer the questions that follow.

Dear Lucky Winner,
This is to inform that you has won a prize money of $1,000,000.00 (ONE MILLION US DOLLARS) in the Facebook Lottery 2018 which is sponsored and organized by Microsoft and Facebook Officials.

CLICK HERE to claim your prize.

Thanks,
The Facebook Team

7.5.1 Give TWO reasons why this is most likely a hoax. (2)

7.5.2 The ‘From’ field of the message (not shown in the screenshot) suggests that the message is from Microsoft.
Name the technique that the author(s) of the message used, to make it appear as if the message was from Microsoft. (1)

7.6 What is grid computing? (2)

Question 8: Solution Development

8.1 The creator of a web page used HTML code to try to change how the text ‘Inkjet’ is displayed on the web page, as follows:

<fontsize="12" colour="lightblue" face="Arail">Inkjet</font>

Give TWO reasons why this HTML code will NOT display the text as the creator intended, when the web page is viewed in a browser. (2)

8.2 Give TWO reasons why it is better to use the Track Changes feature of Word, rather than the Comment feature, to indicate proposed changes to a document. (2)

8.3 The screenshot on the next page shows the results that were obtained when a Word document was checked for accessibility. Study the screenshot and answer the questions that follow:
8.3.1 Name ONE type of object in a *Word* document to which you can add or apply alternative text.

8.3.2 In what situation, or context, could these inspection results be safely ignored, i.e. alternative text NOT be supplied?

8.4 Study the spreadsheet below and answer the questions that follow:

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td><strong>Staff Wages</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>#</td>
<td>Name</td>
<td>Cellphone</td>
<td>Team</td>
<td>Experience in Years</td>
<td>Rate per Hour</td>
<td>Hours Worked</td>
<td>Experience in Years</td>
<td>Rate per Hour</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>Ruan</td>
<td>0821542122</td>
<td>A</td>
<td>3</td>
<td>R170</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>Clifford</td>
<td>0831531591</td>
<td>B</td>
<td>4</td>
<td>R200</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>Rose</td>
<td>0841968603</td>
<td>B</td>
<td>2</td>
<td>R140</td>
<td>12</td>
<td></td>
<td>1</td>
<td>R120</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>Solly</td>
<td>0761859446</td>
<td>A</td>
<td>1</td>
<td>R120</td>
<td>15</td>
<td></td>
<td>2</td>
<td>R140</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>Moyra</td>
<td>0721827843</td>
<td>B</td>
<td>3</td>
<td>R170</td>
<td>15</td>
<td></td>
<td>3</td>
<td>R170</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
<td>Thina</td>
<td>0711453229</td>
<td>A</td>
<td>4</td>
<td>R200</td>
<td>17</td>
<td></td>
<td>4</td>
<td>R200</td>
</tr>
<tr>
<td>9</td>
<td>7</td>
<td>Wafid</td>
<td>0771368858</td>
<td>A</td>
<td>1</td>
<td>R120</td>
<td>21</td>
<td></td>
<td>5</td>
<td>R250</td>
</tr>
<tr>
<td>10</td>
<td>8</td>
<td>Samson</td>
<td>0821764780</td>
<td>B</td>
<td>5</td>
<td>R250</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.4.1 Name a function to determine how many people are listed, that could be used on cells **A3:A10**, but NOT on cells **B3:B10**.

8.4.2 Name the data type that was used for cells **C3:C10**.

8.4.3 Which function, besides a nested IF function, would be used in column F to determine the *Rate per Hour* for each person, based on their experience in years?

8.4.4 Describe in your own words what the following function will determine in this spreadsheet:

\[=\text{COUNTIFS(D3:D10,}"B",\text{G3:G10,}"\geq15"\text{)}\]

8.4.5 Suggest a type of chart to display the percentage of hours worked by staff in Team A and Team B, respectively.

8.5 Give TWO ways to extract information from a table in Access, besides using a query.

8.6 What is the smallest field size that can be set for a field in Access, that has the following Input Mask?: \(>L<LL00\)
SECTION C

Community Computer Club

You are part of a group of CAT learners who have volunteered their services to the Community Computer Club, for a series of computer courses that will be held in the school’s media centre. Your responsibilities will be to assist the organiser, Mr Jordan. A list of tips and best practices to follow when using a computer is also being compiled.

Question 9: Integrated Scenario

9.1 The network in the school’s media centre consists of one server and a number of desktop computers that are connected to it.

9.1.1 Briefly describe the general function of any server in a network. (1)

9.1.2 Give the term commonly used to describe the desktops or any other computer connected to the network. (1)

9.1.3 Give ONE hardware item in a file server, besides the CPU, which generally has a higher specification than the corresponding item in the other computers on the network. (1)

9.1.4 Explain why the network described in this scenario is NOT an example of a WAN. (1)

9.2 It has been suggested that course members be allowed to bring their own laptops and tablets and connect these to the network during the courses.

9.2.1 Give the term (abbreviation) commonly used to describe the concept whereby people may bring their own devices to connect to and access a network. (1)

9.2.2 Give TWO advantages to the school if this suggestion is accepted. (2)

9.2.3 Suggest ONE item entry that the school could add to their Acceptable Use Policy, that might help the school to save on internet connection costs, if this suggestion is accepted. (1)

9.2.4 Give TWO reasons why the school might decide NOT to allow course members to connect their own devices to the network. (2)

9.3 The computers are being equipped with wireless input devices.

Give ONE advantage and ONE disadvantage of using wireless input devices, besides cost considerations. Clearly state which is the advantage and which is the disadvantage. (2)

9.4 An older printer in the media centre needs to be replaced. The new printer must, among other things, be able to

- produce high quality colour prints
- accept print jobs from mobile devices, and from all the computers.

Now answer the following questions:

9.4.1 Why is it better if the new printer has separate cartridges for each of the four colours (Cyan, Magenta, Yellow and Black)? (1)

9.4.2 What technology allows mobile devices to print directly to the printer, without having to join a wireless network? (1)
9.4.3 Name the unit in which the resolution of a printout is measured. (1)

9.4.4 The computers are running a variety of operating systems – Linux, Mac OS X and Windows.
Give the implications of this ‘mixture’ of operating systems, in terms of the software that must be installed on the computers to control the printer. (2)

9.4.5 Mr Jordan wants to be able to convert hardcopy documents to text that can be edited in *Word*.
- a) Name the **type of software** that can be used for this purpose. (1)
- b) Give the general term for the **type of printer** that can perform this function. (1)

9.5 The file server must be backed up regularly.
9.5.1 Give ONE reason why cloud storage might NOT be a suitable backup solution. (1)
9.5.2 Suggest a more suitable backup solution than cloud storage, besides optical media (CD/DVD). (1)

9.6 Mr Jordan used a utility that put the scattered parts of files on a hard drive back into ‘whole files’ on the drive.
9.6.1 Name the type of utility that Mr Jordan used. (1)
9.6.2 Why did Mr Jordan use this utility – i.e. why did he feel it was necessary to put the scattered parts of files back into whole files? (1)

9.7 A new computer needs to be bought for the media centre. Consider the recommended and minimum hardware requirements for the proposed new computer below, and answer the questions that follow:

<table>
<thead>
<tr>
<th>Item</th>
<th><strong>Recommended requirements</strong></th>
<th><strong>Minimum requirements</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>Intel i5</td>
<td>Intel i3</td>
</tr>
<tr>
<td>Hard drive</td>
<td>7200 rpm, 2048 GB</td>
<td>5400 rpm, 1024 GB</td>
</tr>
</tbody>
</table>

9.7.1 What is the size of the **recommended** hard drive, in terabytes? (1)
9.7.2 What are the numbers 7200 and 5400 a measurement of? (1)
9.7.3 Which component that is very important for the effective functioning of any computer, is **missing** from the list? (1)
9.7.4 Why is it generally better to stick to the **recommended** requirements, rather than be satisfied with the **minimum** requirements? (1)
9.7.5 Give ONE reason why the school might decide to buy the computer with the **minimum** requirements. (1)
9.8 Course members will be introduced to various web-based applications.

9.8.1 Give TWO disadvantages of a web-based application, besides the fact that it requires a fast and reliable internet connection. (2)

9.8.2 The apps Numbers, Pages and Keynote, produced by Apple for mobile devices, will also be discussed.

Name the operating system that these apps are designed to run on. (1)

9.9 Mr Jordan wishes to send the following files to the course members:
- Confidential.txt
- Welcome!.exe

9.9.1 Give TWO reasons why Mr Jordan should NOT try to send these specific files as e-mail attachments. (2)

9.9.2 Give TWO ways in which files can be sent electronically to others, besides as e-mail attachments. (2)

9.9.3 Explain why Mr Jordan might wish to save the Confidential.txt file as Confidential.docx before sending it to the course members, besides any issues relating to formatting. (1)

9.10 Course members will be encouraged to use Google Drive for file storage, as files stored on this system can be ‘synced’ (synchronised).

9.10.1 What general benefit does ‘syncing’ hold? (1)

9.10.2 Give TWO advantages of cloud storage, besides the benefit of ‘syncing’. (2)

9.10.3 Give ONE example of a cloud storage service, besides Google Drive. (1)

9.11 Mr Jordan wanted to know when the Avast! software package was last updated on the computers.

9.11.1 What type of software is Avast!? (1)

9.11.2 What will happen if this type of software is not updated regularly? (1)

9.12 Course members will be shown various tips and best practices to follow when using a computer.

9.12.1 Users often type in dates in the wrong format.

Give TWO ways in which the designer of an Access form can help to ensure that dates are entered in the correct date format. (2)

9.12.2 Give ONE reason for using the keyboard shortcut Ctrl+Alt+Delete. (1)

9.12.3 Give the term (abbreviation) used for the medical condition that can result from the improper use of input devices (especially the keyboard and the mouse). (1)

9.12.4 Give ONE way in which a person could minimise the risk of the condition mentioned in question 9.12.3, besides taking regular breaks and using the input devices properly. (1)
9.13 To alert course members to potential dangers for users when they are online, Mr Jordan showed them the e-mail message below. Study the e-mail message and answer the questions that follow.

L U N O

Dear valued customer

Please confirm your email address by clicking the button below.

This is to ensure your profile active and secure.

Confirm Email Address

NOTE: Failure to confirm your email will lead to profile suspension.

Regards,
Team Luno

9.13.1 With reference to the content of the message, give ONE reason why this is most likely a phishing attack. (1)

9.13.2 Give the general term used to describe any attempt to trick or manipulate a person into revealing information such as a password or account number (whether on a computer or not). (1)

9.13.3 Give ONE way in which a person could try to prevent such e-mail messages from landing up in their inbox. (1)

[50]

TOTAL: 150