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TOTAL MARKS

NATIONAL SENIOR CERTIFICATE EXAMINATION MAY 2021

COMPUTER APPLICATIONS TECHNOLOGY: PAPER I

EXAMINATION NUMBER [grid]

Time: 3 hours

150 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

- 1. This question paper consists of 36 pages. Please check that your question paper is complete.
2. The paper is divided into Section A (25 marks), Section B (75 marks) and Section C (50 marks).
3. Answer ALL the questions on the question paper and hand it in at the end of the examination. Remember to write your examination number in the space provided.
4. If you need more space you may use the extra lines provided at the end of each question or at the end of the exam paper, however, make sure that you indicate this clearly to ensure that your answer is marked in full.
5. Non-programmable calculators may be used.
6. It is in your own interest to write legibly and to present your work neatly.
7. Read the questions carefully. Take note of the wording of the questions, such as explain, name, select, discuss and identify, and answer accordingly.
8. Give your answers in general terms. Use brand names only when asked, e.g. use "word processor" rather than "Microsoft Word" or "WordPerfect".
9. In general, a mark is allocated per fact. Therefore, a two-mark question would require two facts and so on.
10. DO NOT USE CORRECTING FLUID.

FOR OFFICE USE ONLY: MARKER TO ENTER MARKS

Table with 10 columns: Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q9, TOTAL. Row 1: 15, 10, 22, 17, 10, 12, 14, 25, 25, /150

SECTION A

QUESTION 1

1.1 Choose the word(s) in Column B that **BEST** describe(s) the definition in Column A. Write down **ONLY** the letter of your choice in the space provided next to each question number, for example 1.1.6 M.

	Column A	Column B
1.1.1	A distributed system whereby the resources of many computers are shared and used at the same time to solve a single problem.	A. Decryption
1.1.2	The process of downloading a file from the internet from more than one server at the same time.	B. Tags
1.1.3	The use of codes or keys to unlock data so that it can be read and understood by you or a computer.	C. Gateway
1.1.4	Code that describes how a webpage is formatted in html.	D. Grid computing
1.1.5	A device used to connect two different networks, especially a connection to the internet.	E. NIC
		F. Passwords
		G. Torrenting
		H. Router
		I. Metadata
		J. Streaming
		K. Tabs
		L. Cloud computing

WRITE YOUR ANSWER HERE

1.1.1	
1.1.2	
1.1.3	
1.1.4	
1.1.5	

(1)

(1)

(1)

(1)

(1)

1.2 Select the **MOST** appropriate answer to each question. Write down **ONLY** the letter of your choice in the space provided next to each question number.

1.2.1 When scanning an email message, you have an option to select "protect against timeouts". This means that the antivirus program ...

- A tells you when the internet connection will be broken.
- B scans your incoming and outgoing email within a specific time frame.
- C prevents interruptions from your email program displaying errors when attachments are scanned.
- D automatically removes suspected email worms that have been detected.

1.2.1	
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(1)

1.2.2 Field names in an expression in a database object are enclosed in ...

- A round brackets.
- B square brackets.
- C single quotes.
- D double quotes.

1.2.2	
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(1)

1.2.3 Which one of the following options refers to the speed and type of connection offered by networks?

- A FTP
- B ISP
- C GPS
- D HSDPA

1.2.3	
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(1)

1.2.4 Which one of the following statements about computer memory is **FALSE**?

- A SDRAM, DDR and DDR3 are examples of computer memory.
- B Double Data Rate is a fast type of computer memory.
- C You can mix different types of computer memory.
- D SRAM is used for cache memory.

1.2.4	
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(1)

1.2.5 Which one of the following objects in a database does not provide for a Datasheet view?

- A Forms
- B Tables
- C Reports
- D Queries

1.2.5	
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(1)

1.2.6 Which one of the following is **NOT** a function that is available for calculations in a Word table?

- A LEN
- B SUM
- C AVERAGE
- D COUNT

1.2.6	
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(1)

1.2.7 Many home users are hesitant to use video in a web chat because ...

- A it requires the latest operating system to be installed.
- B webcams are not needed.
- C it will rapidly reduce the available cap.
- D webcams can only capture and send .jpg files.

1.2.7	
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(1)

1.2.8 You have recently bought a new printer and find that it quickly uses up toner. Which of the following are possible methods that you can use to reduce the amount of paper and ink used?

- (I) Reduce, re-use or recycle paper.
 - (II) Proofread draft copies before the final print.
 - (III) Use the econo-mode or ink-saving mode of your printer for draft printing.
 - (IV) Save email messages and files on your computer in specifically created folders instead of keeping hard copies.
 - (V) Print side by side and back to back.
- A All of the above
 - B All except I
 - C All except II
 - D Only III

1.2.8	
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(1)

1.2.9 Which **ONE** of the following features of a word-processing program can be used to move quickly to a specific word or phrase in a document?

- A Endnote
- B Bookmark
- C Formula
- D Thesaurus

1.2.9	
-------	--

(1)

1.2.10 A shortcut for a series of keystrokes and/or mouse moves that can be recorded for future use to automate a procedure or task is known as ...

- A an add-in.
- B SQL.
- C a smart tag.
- D a macro.

1.2.10	
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(1)
[15]

MARKER'S USE ONLY:	Total mark Q1	
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QUESTION 2

2.1 Choose the **MOST** appropriate term/function (underlined and given in brackets) for each statement that follows. Write **ONLY** the term/function of your choice in the space provided next to each statement number.

2.1.1 Plug and Play is a feature of modern operating systems that enables automatic detection and configuration of (hardware/software).

2.1.1		(1)
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2.1.2 A (PAN/VPN) is a secure way of connecting to a private LAN from a remote location using the internet.

2.1.2		(1)
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2.1.3 The maximum amount of data that can be transmitted from one point to another along a communication channel in a given time period is called (broadband/bandwidth).

2.1.3		(1)
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2.1.4 (PPS/PPM) is the unit used to measure the speed of a printer

2.1.4		(1)
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2.1.5 The (GIGO/FIFO) principle refers to the fact that inaccurate data will produce inaccurate information.

2.1.5		(1)
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2.1.6 A(n) (activation key/product key) is a specific software-based key for certain computer programs; it is also used to track the number of installations.

2.1.6		(1)
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2.2 Expand the following acronyms.

2.2.1 DIMM

(1)

2.2.2 DPI

(1)

2.2.3 OCR

(1)

2.2.4 ICT

(1)
[10]

MARKER'S USE ONLY:	Total mark Q2	
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25 marks

SECTION B

QUESTION 3 SYSTEM TECHNOLOGIES

3.1 Identify each image that follows and complete the table below it.

3.1.1



[Source: <<https://softlay.net>>]

Name of hardware/software	Main function

(2)

3.1.2



[Source: <<https://www.f3nws.com/news/amd-ryzen-7-1800x-review-kZdcUG>>]

Name of hardware/software	Main function

(2)

3.1.3



[Source: <<https://www.the-home-cinema-guide.com/>>]

Name of hardware/software	Main function

(2)

3.1.4



[Source: <<https://www.tomshardware.com/reviews/>>]

Name of hardware/software	Main function

(2)

3.2 The following specifications for a computer were advertised on a website.

23" 16:9 wide screen
VGA and HDMI output
120 GB SATA hard disk drive

3.2.1 Give the unit in which the 23" specification is measured.

(1)

3.2.2 State what the specification 16:9 refers to.

(1)

3.2.3 Compare HDMI to VGA by giving **TWO** reasons why HDMI has an advantage over VGA as a means of output. (*Do not simply give "better image quality" as your answer.*)

(2)

3.2.4 When you install the 120 GB SATA hard disk drive you find it does not work on your system. Give **TWO** possible reasons why the hard drive might not work.

(2)

3.3 Backing up of files should not be done to the primary drive (C:), so an external hard drive (E:) is connected to the computer to store backup files. Examine the following description of a file and answer the questions that follow:

E:\BACKUP\FinalExam\NOV.ZIP

3.3.1 Explain **ONE** possible advantage of making this file *read-only*.

(2)

3.3.2 The file NOV.ZIP has been "zipped", which means that its size has been reduced. What is the advantage of a smaller file size?

(1)

3.3.3 Explain why it is not a good idea to store backup files on the same computer as the original files.

(1)

3.4 Apart from their core functions, system software also includes other useful programs, collectively known as "utilities".

3.4.1 What is a *scheduler* program used for?

(1)

3.4.2 Give any **ONE** criterion that a file manager like Windows Explorer can use to search for a file, besides the name of the file.

(1)

3.4.3 Give **ONE** possible shortcut key combination (with or without the use of the mouse) that can be used to open the Task Manager utility, and state **ONE** use for this utility.

(2)
[22]

MARKER'S USE ONLY:	Total mark Q3	
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QUESTION 4 INTERNET AND NETWORK TECHNOLOGIES

A friend of yours started a small business and needs to set up his small office network.

4.1 Write down the word that **BEST** fits the explanation in each of the following cases:

4.1.1 Hardware and/or software that restricts or prevents unwanted access to a network by other computers.

(1)

4.1.2 A self-replicating program able to copy itself across a network, typically having a harmful effect.

(1)

4.1.3 A device that is the central connection point for all the cables and intelligently manages the transfer of data in the network.

(1)

4.2 The computers need to be networked. A choice must be made between using UTP cables to connect them or connecting them wirelessly.

4.2.1 Give **TWO** advantages of connecting the network wirelessly, in other words, by using a WLAN.

(2)

4.2.2 Give **TWO** possible disadvantages of connecting the network wirelessly.

(2)

4.3 Internet connection will be available to your friend's employees. It is suggested that a poster be made for all to take note of the dangers associated with using the internet.

4.3.1 Give **TWO** tips that could be on the poster for the prevention of pharming.

(2)

4.3.2 Give **ONE** tip that can be a guideline for using the internet safely.

(1)

4.3.3 Give **ONE** safety tip when interacting with others online.

(1)

4.4 The business would like to sell its products using only an online internet site.

4.4.1 Give **TWO** features that their website should include.

(2)

4.4.2 State **TWO** advantages of customers using the internet for shopping.

(2)

4.4.3 Write down **ONE** advantage of customers searching for information on the internet rather than using books.

(1)

4.5 How can a report be sent, via the internet, to the sales office in the house across the road, to give feedback on how products are selling?

(1)

[17]

MARKER'S USE ONLY:	Total mark Q4	
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QUESTION 5 INFORMATION MANAGEMENT

Google Street View is a technology featured in Google Maps and Google Earth that provides interactive panoramas from positions along many streets in the world. It was launched in 2007 in several cities in the United States, and has since expanded to include cities and rural areas worldwide. Streets with Street View imagery available are shown as blue lines on Google Maps. Most photography is done by car, but some is done by tricycle, walking, boat, snowmobile, and underwater apparatus.



[Source: <<http://www.bilkulonline.com/google-street-view-offers-peek-into-us-voting-pattern>>, <https://www.wikipedia.org/wiki/Google_Street_View>]

5.1 As the Google Maps Street View vehicle drives, it captures data and this data becomes information. Explain the difference between data and information by giving an example relating to Google Maps in your comparison.

(2)

5.2 List **THREE** types of information you would expect to receive once you connect your phone to the Google Maps app.

(3)

5.3 Identify the **TWO** functions needed on your phone to be able to receive Google Maps information.

(2)

5.4 Identify **TWO** possible ways that Google Maps could use the data collected to benefit a country, its citizens and its road safety departments.

(2)

5.5 Indicate how the collected data could have a negative effect on a citizen's privacy.

(1)
[10]

MARKER'S USE ONLY:	Total mark Q5	
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QUESTION 6 SOCIAL IMPLICATIONS

6.1 People generally use devices to transfer messages and/or digital data to one another. Give **TWO** examples of how digital communications can save a company money.

(2)

6.2 Blogs are now an everyday part of life and are being created by individuals and businesses alike. Define the term *blog* and briefly explain how they work.

(2)

QUESTION 7 SOLUTION DEVELOPMENT

7.1 The Marvel franchise wants to know how well the business is doing. The financial officer of Marvel sets up a budget spreadsheet as follows:



[Source: <<https://www.marvel.com/>>]

	A	B	C	D	E	F	G
1	Budget						
2	Month	Cost of transport	Cost of equipment	Total costs	Total sales	Profit/ Loss	
3	January	900 000	860 000	1 760 000	4 050 000	2 290 000	Profit
4	February	850 000	590 000	1 440 000	1 380 000	-60 000	Loss
5	March	920 000	700 000	1 620 000	2 000 000	380 000	Profit
6	April	1 000 000	660 000	1 660 000	3 900 000	2 240 000	Profit
7	May	1 005 000	740 000	1 745 000	4 200 000	2 455 000	Profit
8	June	1 400 000	890 000	2 290 000	5 000 000	2 710 000	Profit

7.1.1 Write down the formula used in **F3** that will calculate the profit/loss for January.

(2)

7.1.2 Write down the full function that will display the words *Profit* or *Loss* used in **G3**.

(3)

7.1.3 Which of the columns will be needed to create a line graph of the sales and costs for January to June?

(3)

7.1.4 Identify the formatting used in Row 1 Cell A–G.

(2)

7.2 The marketer realises that an online presence is vital for the success of the Marvel franchise. He asks you to set up a website. Having learnt to program html, you come up with the following code.

```
<html>
<title>Marvel franchise</title>
</head>
<p><table cellpadding=5 cellspacing=10 width=0 border=0 bgcolor="#000080"
background="images/wallpaper.jpg">
<tr>
<th colspan=1 rowspan=1>Ordering Times</th>
<th colspan=1 rowspan=1>09.00</th>
<th colspan=1 rowspan=1>10.00</th>
<th colspan=1 rowspan=1>11.00</th>
<th colspan=1 rowspan=1>12.00</th>
<th colspan=1 rowspan=1>13.00</th>
</tr>
</body>
```

When you try to execute the above code, it does not display what you expected. Carefully examine the code and determine which tags have unintentionally been left out. List any **FOUR** missing tags below:

(4)
[14]

MARKER'S USE ONLY:	Total mark Q7	
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75 marks

SECTION C

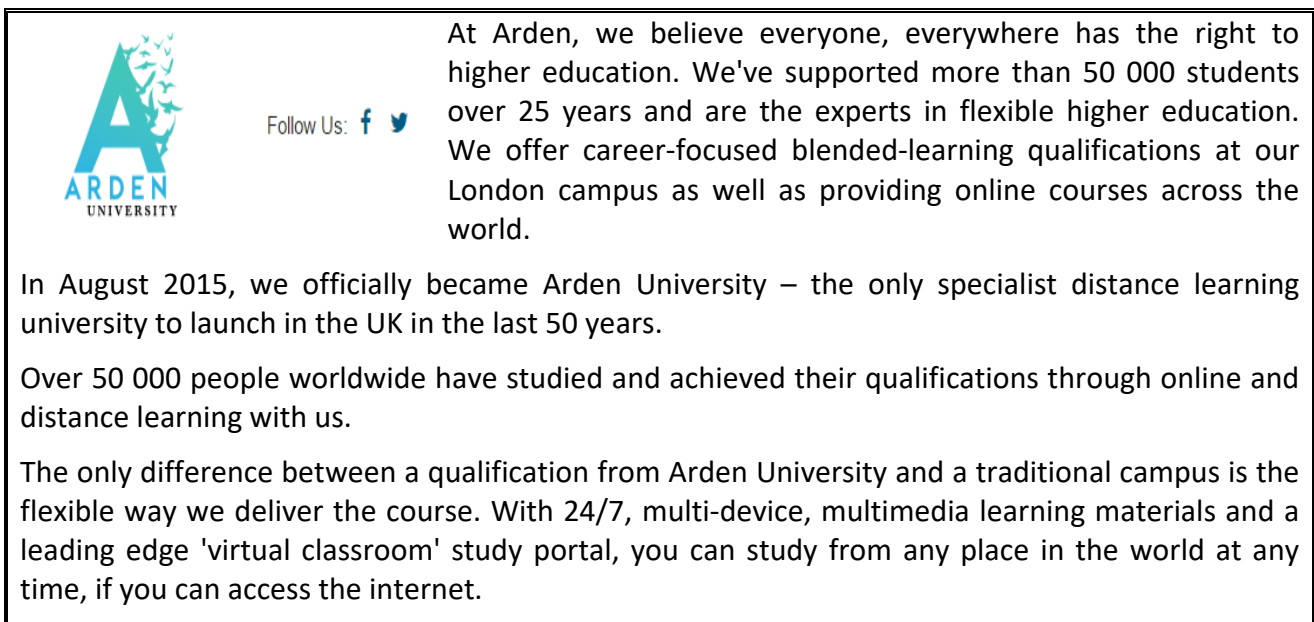
QUESTION 8 INTEGRATED SCENARIO

With the many possibilities that are available to study either at a local tertiary institution or online, you decide to look at the option of studying online.

Searching the "web", you come across the following URL: <https://arden.ac.uk/uk-university-courses-in-africa> for Arden University. Browsing through their webpages, you realise that you can study online at this university, while living at home in South Africa, and obtain an internationally recognised qualification.

Online learning enables you to study part-time. As a school leaver wanting to start your career without sacrificing your education, online study may be the solution for you.

An extract from the Arden University website is shown in Figure 1.



[Source: <<https://arden.ac.uk/>>]

Figure 1

8.1 All webpages are identified by a *URL*. Clearly explain the term URL and its purpose.

(2)

8.4 You need to work with a new office suite that has a good user-centred design, but the software still has bugs (errors) and often freezes on your computer.

Briefly explain the difference between a *patch* and a *service pack* in terms of the **role** (function) each one plays in software.

(2)

8.5 For Arden University to be able to ensure that all assignments are authentic, it is important to have each student registered. Which **TWO** pieces of data will be required to log on to the website? Identify them and differentiate between the two.

(4)

8.6 You consider using a *phablet device*. You were told that not everyone is privileged to have this option due to the *digital divide*.

8.6.1 Describe briefly what a phablet is, in terms of other similar portable computing devices.

(2)

8.6.2 What is the *digital divide*?

(1)

8.7 Arden University has two ways that you can follow them, namely Facebook and Twitter.

8.7.1 Identify the term used for sites where individuals or organisations can post their likes, dislikes, interests and comments.

(1)

8.7.2 Point out **TWO** reasons why it will be to your benefit to follow Arden University on Facebook and Twitter.

(2)

8.8 You heard that "Microsoft Office 365 is 'downwards' or 'backwards' compatible with Microsoft Office 2016".

8.8.1 Explain what the above statement means.

(1)

8.8.2 Briefly describe a common technique to solve, or overcome, compatibility problems between different versions of the same application.

(1)
[25]

MARKER'S USE ONLY:	Total mark Q8	
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QUESTION 9 INTEGRATED SCENARIO (continued)

9.1 "You can study from any place in the world at any time, as long as you can access the internet".

9.1.1 Give a short, but clear, definition of the term *internet* and its main functions.

(3)

9.1.2 Discuss how, when accessing Arden University's website, your browsing experience may be affected by using a mobile device instead of a laptop.

(2)

9.2 Due to all the online studying, you will need a powerful computer that can make your study experience a positive one.

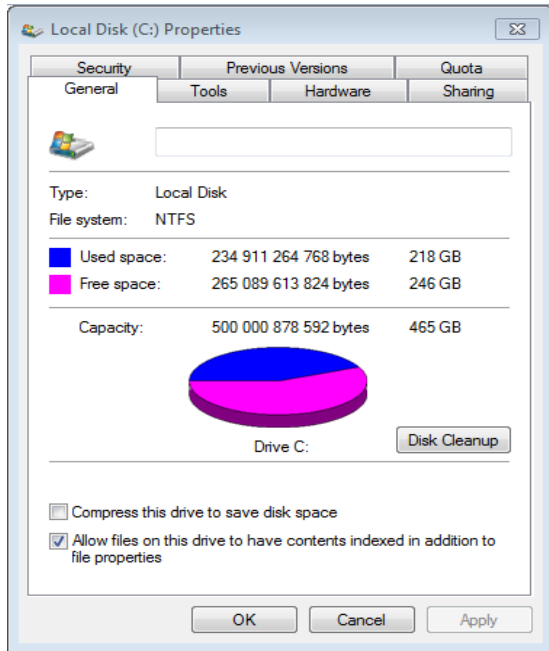
9.2.1 Name **TWO** of the main hardware components of a computer that generally make it more or less powerful than another computer.

(2)

9.2.2 You need to convince your parents to buy you a laptop. Give **THREE** advantages of a laptop.

(3)

9.2.3 Study the image below that shows some of the properties of a local hard drive on a laptop. Explain the purpose of the Disk Cleanup button.



(1)

9.3 In the extract taken from Arden University's website, mention is made of "multimedia learning material".

9.3.1 What is meant by the term *multimedia*?

(2)

9.3.2 Give **ONE** example of popular multimedia authoring software.

(1)

9.3.3 Indicate whether "multimedia software" is *system software* or *application software*.

(1)

9.4 Give **TWO** reasons why you should consider purchasing a UPS.

(2)

9.5 Online storage and cloud computing are becoming more popular among users to share, synchronise and store files.

9.5.1 Give **ONE** example of online storage software.

(1)

9.5.2 Explain what it means to synchronise files.

(1)

9.6 If you don't manage the use of your electronic device while studying online, it could harm the environment and you could develop health issues.

9.6.1 Define the term *green computing*.

(1)

9.6.2 Give **THREE** tips on how to practise green computing.

(3)

9.6.3 Give **TWO** health tips on how you can prevent RSI.

(2)
[25]

MARKER'S USE ONLY:	Total mark Q9	
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50 marks

Total: 150 marks

