

June 2017

COMPUTER APPLICATIONS TECHNOLOGY
Grade 11
Paper 2 – Written

TIME: 2.5 HOURS

MARKS: 125

This question paper consists of **11** pages (cover page included)

Instructions and information

1. The question paper consists of three sections: Section A (25 marks), Section B (70 marks) and Section C – the integrated scenario (30 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 on this question paper.
 5. Leave a blank line after each sub-question.
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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 factors is the least important in determining how 'powerful' a computer is?
- A. The size of the memory
 - B. The size of the monitor
 - C. The capacity of the hard drive
 - D. The speed of the processor
- (1)
- 1.2 Which one of the following does NOT contain a battery of some type?
- A. Portable printer
 - B. Wired keyboard
 - C. UPS
 - D. iPod
- (1)
- 1.3 Which one of the following fields in a database table storing pupil records are you the most likely to set a default value on?
- A. Address
 - B. Surname
 - C. Gender
 - D. ID number
- (1)
- 1.4 Which one of the following is a disadvantage or limitation of display devices in general?
- A. Output is not permanent.
 - B. Text can be enlarged for people with poor vision.
 - C. Error messages can be displayed when the user makes a mistake.
 - D. They provide immediate feedback to the user
- (1)

- 1.5 Which one of the following will NOT make a web page easier to read?
- A. Separating unrelated items.
 - B. Typing the text all in upper case.
 - C. Using numbered or bulleted lists.
 - D. Using columns and short paragraphs. (1)
- 1.6 In word processing, Harvard and APA are styles associated with ...
- A. headings.
 - B. captions.
 - C. bibliographies.
 - D. footnotes and endnotes. (1)
- 1.7 Which one of the following is NOT directly associated with networks?
- A. Proxy server
 - B. Access point
 - C. Transceiver
 - D. Control Panel (1)
- 1.8 Which one of the following is NOT directly associated with the creation of web pages?
- A. CSV
 - B. JavaScript
 - C. HTML
 - D. CSS (1)
- 1.9 Which one of the following Access objects is specifically designed to print information from a database?
- A. Form
 - B. Table
 - C. Report
 - D. Query (1)
- 1.10 Which one of the following series can NOT be created using the Auto Fill option in *Excel*?
- A. week 1, week 2, week 3, week 4
 - B. 2, 5, 8, 11
 - C. 24-05-2017, 25-05-2017, 26-05-2017, 27-05-2017
 - D. a, b, c, d (1)

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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.

| Column A | Column B |
|---|--|
| 2.1 A type of memory that holds the instructions used to get a computer ready for use when you switch it on | A. Point-and-shoot B. DSLR C. LAN D. Boot E. Ergonomics F. DIMM G. DPI H. ROM I. Intel J. 802.11 K. Core L. A4 M. 500 MHz N. RSI O. Monthly duty cycle P. 10 Mbps Q. LCD R. Apple |
| 2.2 The company that produces the iPad range of tablets | |
| 2.3 A single physical processor | |
| 2.4 A specification of a printer, measured in terms of a number of pages | |
| 2.5 A 'stick' of memory that fits into a slot on the motherboard | |
| 2.6 A type of high-end camera designed for professional use | |
| 2.7 A specification associated with wireless networking | |
| 2.8 A technology used in TV and computer screens | |
| 2.9 A type of injury resulting from fast, repetitive actions | |
| 2.10 An example of a data transmission speed in a network | |

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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 A 3.5" external drive can get all the power it needs from a USB port.

3.2 A Boolean value in Access can assume only one of two logical values, i.e. yes/no or true/false.

- 3.3 An accelerometer is used to detect how you are holding a mobile device so the operating system can change the orientation of the screen appropriately.
- 3.4 The RANDBETWEEN function in *Excel* is used to return a random real (decimal) number between 0 and 1.
- 3.5 It is best to use optical zoom on a digital camera to ensure that magnified images do not become blurry and pixelated.

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SECTION B

Question 4 – System Technologies

- 4.1 Consider the advertisement for a tablet below and answer the questions that follow:

10" 16x10 Display (1280 x 800)
 Quad core 1.83 GHz
 16 GB storage
 1 GB DDR3 RAM
 Built-in 3G, WiFi and GPS
 Front and rear cameras
 Micro SD Card Reader (up to 32 GB)
 Windows 8.1
 Includes Office 365 Personal and 1 TB cloud storage

- 4.1.1 How much memory does this tablet have? (1)
- 4.1.2 Give the resolution of the screen and state the unit in which resolution is measured. (2)
- 4.1.3 What is the basic function of GPS technology? (1)
- 4.1.4 Give the common term for the item referred to in the 'Quad core 1.83 GHz' specification. (1)
- 4.1.5 State the unit in which the resolution of the cameras is measured. (1)
- 4.1.6 Does the tablet have the hardware needed to transfer files wirelessly to another device? Motivate your answer. (1)
- 4.1.7 Give ONE example of an operating system designed for mobile devices, besides Android and the Windows range. (1)
- 4.1.8 Explain why it is not necessary to back up an operating system once it has been installed. (1)
- 4.1.9 The advertisement includes 1 TB of cloud storage.
- (a) Give ONE example of an online storage facility. (1)
- (b) Give TWO advantages of online storage, besides the sharing of files. (2)
- 4.2 Give TWO ways in which ICT can play a negative role in the workplace. (2)

- 4.3 Briefly explain why an ATM (Automatic Teller Machine), even though it can perform a variety of different types of transactions, cannot be considered a general-purpose computer. (1)
- 4.4 Briefly explain why, in a network, a typical client computer does not need to be as powerful as a server. (1)
- 4.5 Name the hardware device that is used to protect a computer against power surges and spikes. (1)
- 4.6 Consider the advertisement for a scanner below and answer the questions that follow:

Flatbed Scanner

- High resolution scans up to 4800 x 4800
- 48-bit colour depth
- Scanning speed (colour): 2.2 msec/line (300 dpi)
- Scanning speed (greyscale): 2.2 msec./line (300 dpi)
- Power supply: Supplied via USB port
- Drivers for Windows 7 / Vista / XP | Mac OS X

- 4.6.1 Give the unit in which the resolution of a scanner is measured. (1)
- 4.6.2 What is the main disadvantage of scanning at a high resolution? (1)
- 4.6.3 What does the term 'colour depth' refer to? (1)
- 4.6.4 What would be the advantage of scanning in greyscale rather than in colour (at the same resolution)? (1)
- 4.6.5 What would be the advantage of having the type of power supply as specified in the advertisement? (1)
- 4.6.6 Give ONE advantage of upgrading the drivers that are included with this scanner. (1)
- 4.6.7 Give ONE general limitation of scanners. (1)
- 4.7 Briefly explain what biometric input involves, and give ONE practical example of where this type of input is used. (3)
- 4.8 A monitor has the following specifications:

7 ms
16:9 aspect ratio

- 4.8.1 Name the specification given as 7 ms. (1)
- 4.8.2 What does the aspect ratio of a monitor describe, or specify? (1)
- 4.8.3 Give the name of a monitor interface, or port, NOT listed in the specifications above, that transmits high definition video and audio via a single cable. (1)
- 4.9 Give TWO troubleshooting techniques you can try if you cannot write to a CD or DVD successfully. (Assume that there are no problems with the media or with the drive itself.) (2)

Question 5 – Network Technologies

- 5.1 Give TWO reasons why an organisation would wish to store files that relate specifically to the organisation (e.g. training videos), on an intranet rather than on the Internet. (2)
- 5.2 Networks consist of one or more servers and other computing devices, linked together.
- 5.2.1 Give ONE advantage of having an Internet (proxy) server in a network, besides the fact that it allows users to connect to the Internet. (1)
- 5.2.2 Name TWO types of servers, often found in larger organisations, besides an Internet (proxy) server. (2)
- 5.2.3 What general term is given to any computing device that uses network resources? (1)
- 5.3 What is the purpose of a *switch* in a network? (1)
- 5.4 Why do computers today seldom need to have a separate NIC (network interface card) to connect the computer to a network? (1)
- 5.5 Fibre optic cable is mainly used as a *backbone* in networks.
- 5.5.1 Briefly explain what a backbone is, in terms of network cabling. (1)
- 5.5.2 Give ONE advantage of fibre optic cable, over other types of network cable. (1)
- 5.5.3 Give the name of the type of network cable most commonly used to connect computers in a LAN. (1)
- 5.6 What factor usually determines how many access points have to be installed in a wireless network (for example, at a school)? (1)
- 5.7 A CAT learner accesses a file from the following location on a school network:
U:\Resources\Exercises\Excel
Where on the network is this file most likely stored? (1)
- 5.8 Briefly describe what a *keylogger* does once it is installed on a computer, and explain why keyloggers are classed as malware (malicious software). (2)

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Question 6 – Information Management

- 6.1 Explain why many academic institutions do not allow students to include Wikipedia as a source in their research tasks. (1)
- 6.2 Give TWO advantages of conducting a survey online, as opposed to approaching people individually (e.g. by phone or in shopping malls).
Exclude from your answer the speed and ease with which data may be collected. (2)

- 6.3 Study the questionnaire below and answer the questions that follow below the questionnaire:

Name: Age: Gender: Class:

1. Who is your favourite TV personality?

2. Do you sometimes watch the news on TV? YES / NO (Circle your answer)

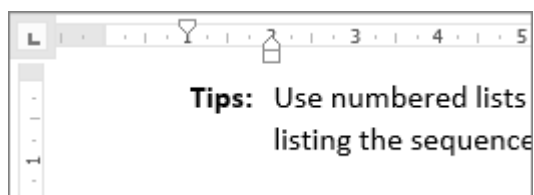
3. How many hours do you spend watching TV?

- 6.3.1 Explain why question 1 is a *closed* question. (1)
- 6.3.2 Why should the word 'sometimes' be removed from question 2? (1)
- 6.3.3 Question 3, as it currently stands, will not result in good quality information. Explain what is wrong with this question. (You may also reword the question appropriately.) (1)
- 6.3.4 Suggest a way in which the questionnaire could be changed, so that respondents would be more likely to complete the questionnaire honestly. (1)
- 6.4 Explain why it is sometimes a good idea to save a file in a previous version of the software before sharing the file with others. (1)

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Question 7 – Solution Development

- 7.1 Give ONE advantage of printing a document in *draft* mode. (1)
- 7.2 Give ONE advantage and ONE disadvantage of saving a *Word* document as a file with an extension of .TXT before distributing it. (2)
- Distinguish clearly between the advantage and the disadvantage in your answer.
- 7.3 Explain why, when performing a Find and Replace operation in *Word*, it is sometimes necessary to use the 'Find whole words only' option. (You may use an example to illustrate your answer.) (1)
- 7.4 The current date was added as a field to a *Word* document, with the date format: MMM DD How will the date will be displayed if the document is opened on Friday 18 August 2017? (1)
- 7.5 Name the type of indent that was used to position the word 'Tips', in the following screenshot of a *Word* document, one centimetre to the left of the main body of the paragraph: (1)



- 7.6 The operator ^ can be used in *Excel* to return the result of the expression $2 \times 2 \times 2$ (i.e. $=2^3$).

Give the name of an *Excel* function that can be used, instead of the ^ operator, to return the same result. (1)

- 7.7 Study the following function that was entered in cell H25 of a spreadsheet, and answer the questions that follow:

=IF (G1>=90,distinction,"")

- 7.7.1 Suppose the value 80 is entered in cell G1.

What will be displayed in cell H25? (1)

- 7.7.2 Explain why the function will give an error message, if the value 90 is entered in cell G1. (1)

- 7.8 Give ONE feature of a database table that can be used to display just certain records, besides using a query. (1)

- 7.9 The following Access query is supposed to show the names and the number of cans collected by learners in classes 11A and 11B, who collected at least 50 cans each in a recycling exercise:

| | | | |
|-----------|-------------------------------------|--------------------------|--------------------------|
| Field: | Name | Class | Cans |
| Table: | Recycling | Recycling | Recycling |
| Sort: | | | |
| Show: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Criteria: | | "11A" And "11B" | at least 50 |
| or: | | | |

Give THREE reasons why this query will NOT produce the desired (correct) results. Indicate in each case how the design of the query must be changed in order to obtain the correct results. (3)

- 7.10 Give ONE reason why setting a field as a primary key in a database can help to improve the quality of data in a database. (1)

- 7.11 Give ONE suitable example to show that, however well a database is designed to ensure that the data is always *valid*, it can never ensure that the data is always *correct*. (1)

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SECTION C

CAT Exhibition

Your school has decided, as part of Open Day, to hold a CAT exhibition in the school hall for prospective CAT learners and their parents. The CAT teacher, Mr Madden, has asked you to help prepare for the exhibition. A small Internet-connected network, including a printer, will be set up.

Question 8 – Integrated Scenario

- 8.1 It was decided to set up a wireless network rather than a cabled network.
- 8.1.1 Give TWO reasons that may have prompted this decision. (2)
- 8.1.2 Give ONE potential disadvantage of setting up a wireless network, in this situation, besides cost. (1)
- 8.2 An extract of the school's AUP must be displayed.
- 8.2.1 What is an AUP? (Do not just state what the letters stand for.) (1)
- 8.2.2 The AUP currently exists only in hardcopy format.
Outline a way in which the AUP could be converted to a digital format that could be edited in a word processor. A flatbed / sheet-fed scanner is NOT available. (2)
- 8.3 Mr Madden asked you to design a poster with tips for choosing a good password. Printouts of this will be made if people ask for them.
- 8.3.1 Give TWO tips for making up a password that will be difficult to guess or 'crack'. (2)
- 8.3.2 Explain why the *duplex printing* feature of the printer would most likely NOT be used in this scenario. (1)
- 8.3.3 Give the unit in which the speed of a printer is usually measured. (1)
- 8.4 You must check that the web page advertising the workshop is easy to navigate (move around on).
- Give TWO guidelines for the construction of links on a web page, that will make it easier for a user to navigate on a website. (2)
- 8.5 Mr Madden will use an interactive whiteboard to demonstrate the school's intranet facilities. He does not want his demonstration to be disrupted by adware.
- 8.5.1 Give ONE possible reason why Mr Madden decided to use an interactive whiteboard for the demonstration, rather than just a data projector. (1)
- 8.5.2 What is adware? (1)
- 8.5.3 How can Mr Madden prevent adware disruptions? (1)
- 8.6 A data projector will be used elsewhere for *PowerPoint* presentations.
- Give the unit in which the brightness of the image projected is specified, or measured. (1)

- 8.7 Mr Madden uses a portable hard drive to back up the data from the server.
- 8.7.1 What name is given to the set of rules about how the drive identifies itself to the server computer, and is automatically prepared for use when connected to it? (1)
- 8.7.2 Suggest TWO reasons why Mr Madden uses a portable hard drive as the medium, instead of using an online service, besides the fact that an online service is only accessible if there is an Internet connection. (2)
- 8.8 Leaving computer equipment in the school hall overnight puts it at risk of being stolen.
- 8.8.1 Give ONE way to try to prevent theft of the hardware, besides preventing physical access into the hall. (1)
- 8.8.2 Give ONE software measure that can be put in place to ensure that sensitive data will not be able to be accessed by unauthorised persons? (1)
- 8.9 Give ONE green computing practice that can be followed, besides placing restrictions on how the printer is used? (1)
- 8.10 An analysis of the hard drive of one of the desktop computers reveals that 95% of the drive is 'used space' (is filled with various files), and that 25% of the drive is fragmented. The Recycle Bin is empty.
- 8.10.1 Give the name of a utility program, included with the operating system, that could be used to try to fix the first problem (95% used space). (1)
- 8.10.2 Briefly explain what is meant by saying that a disk is fragmented. (1)
- 8.10.3 What would be the benefit in reducing the percentage of fragmentation of the disk? (1)
- 8.10.4 Explain why formatting the drive is NOT a recommended solution for the fragmentation problem, even though it would reduce the percentage of defragmentation to 0%. (1)
- 8.11 Mr Madden will talk about some interesting ways in which computers and computing devices are being used today.
- 8.11.1 Special devices are used on ocean buoys to collect weather data, instead of relying on human beings to go there to collect the data.
Give ONE disadvantage of this way of collecting the data. (1)
- 8.11.2 What do we call the device that can use CAD (Computer-Aided Design) software to create little computer keyboards – in chocolate? (1)
- 8.11.3 What wireless technology allows smartwatches to be used as portable media players? (1)
- 8.11.4 What technology in some shops allows you to pay for your goods simply by tapping your smartphone on a payment sensor at the till point? (1)

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TOTAL: 125