



basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA



INFORMATION TECHNOLOGY

GRADE 12 - PAPER 2

Date: 24 – 06 – 2015

DURATION: 3 HOURS

MARKS: 150

EXAMINER: M PADAYACHEE

MODERATOR: S NAIDOO

INSTRUCTIONS:

1. Answer ALL Questions.
2. This paper consists of 6 questions and 11 pages including the cover page.
3. Number your answers exactly as the numbering in the question paper.
4. Read ALL the questions carefully. Do not do more than is required by the question.
5. Write clear and concise answers.

QUESTION ONE

There are four options given for questions 1.1. to 1.10. Choose the option(A to E) which best matches the question. Write the letter only of the option that best matches the question.

- 1.1. A malicious program that resides on your computer and propagates via network and Internet connections is known as ...
- A) Adware
 - B) A Spider
 - C) Worm
 - D) A key logger
- 1.2. A organisations private network environment consisting of documents and resources relating to the organisation's business is known as their...
- A) Ethernet
 - B) Extranet
 - C) Intranet
 - D) Internet
- 1.3. Which of the following refers to a type of file system?
- A) NTFS
 - B) SMTP
 - C) TCP/IP
 - D) IRC
- 1.4. Which of the following is the domain part of the e-mail address user1@mybusiness.co.za?
- A) co.za
 - B) user1
 - C) user1
 - D) user1@mybusinsess.co.za
- 1.5. Which one of the following devices is needed to allow communication between networks?
- A) Router
 - B) Switch
 - C) Hub
 - D) Hot Spot
- 1.6. Which one of the following statements related to object oriented programming is true.
- A) A class must have more than one constructor.
 - B) An object is an instantiation on a class.
 - C) A method must always return a value.
 - D) A class must always include accessor methods and mutator methods for each of its attributes.

- 1.7. The maximum rate at which data can be transmitted over an electronic communication medium is known as...
- A) Bandwidth
 - B) Frequency
 - C) Megabits
 - D) Attenuation
- 1.8. Convergence refers to...
- A) technology that is always on.
 - B) technology that does not need to be tethered to wired connections.
 - C) functionalities of many devices built into one.
 - D) The ability of mobile devices to connect to one another.
- 1.9. A *virtual machine* is ...
- A) a new prototype for a computer.
 - B) a theoretical computer such as a Turing machine.
 - C) software emulating a computer.
 - D) A computer running multiple operating systems.
- 1.10. Which one of the following statements is not true?
- A) An interactive web page might contain code that can be executed.
 - B) Flash-applets might be part of a static web page.
 - C) A static web page can be interactive.
 - D) Facebook is dynamic website.

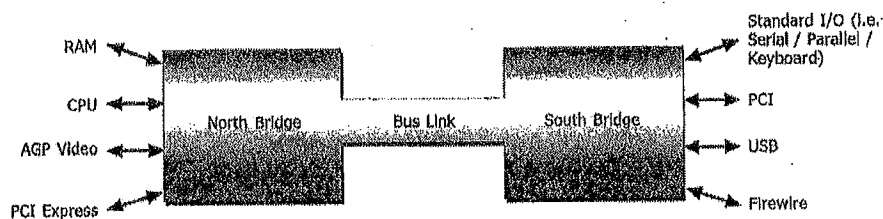
[10]

QUESTION TWO

SCENARIO

A Local primary school in your area recently received a donation from an expanding IT company. A ex-learner from the school has generously donated a large sum of money to upgrade their computers and their current technologies. After doing an assessment of the current technologies, they have several questions that need to be answered. As an IT learner of a Secondary School your assistance is required in upgrading the schools technologies.

The diagram below was made during the hardware and motherboard check:



- 2.1. During the inspection of the hardware, it was found that the RAM of the current computers needs upgrading.
- 2.1.1. Explain the significance of RAM to a computer. (2)
- 2.1.2. Give two reason why it may not be possible to upgrade RAM of some old computers. (2)
- 2.1.3. What is the physical connection between the CPU and the nortbridge called? (1)
- 2.1.4. What is the purpose of the AGP slot? (1)
- 2.1.5. It was told that the PCI Express slots are on board and not hot-pluggable. Explain the terms:
- 2.1.5.1. hot-pluggable. (1)
- 2.1.5.2. on board (1)
- 2.1.6. The ROM chips store firmware. What is firmware? Why is it necessary to ensure that firmware is occasionally updated? (2)
- 2.1.7. What is the purpose of a firewire port? (1)
- 2.2. The school is interesting in e-learning and want to incorporate applications for mobile devices and desktop computers. The use of mobile technology is becoming the most common way of accessing networks and internet.
- 2.2.1. State two limitations of mobile devices as opposed to traditional desktops and laptops. (2)
- 2.2.2. State one challenge facing software developers as they design software applications for mobile devices. (1)
- 2.2.3. Discuss the term Open Source software. (2)

2.4. The use of the internet by learners for research is time consuming.

2.4.1. Explain how **web caching** speeds up the web browsing process. (2)

2.4.2. Describe another type of caching that may enhance the performance of a computer system.(2)

2.5. Virtualisation is becoming more common as a result of more powerful computer hardware.

2.5.1. Explain the concept of virtualisation in a computer system environment. (2)

2.5.2. State two advantages of using virtualisation in a computer system. (2)

2.6. The school wants to use the cloud to store administrative data.

2.6.1. Discuss the expression "*storing data in the cloud*" (2)

2.6.1. State two problems that may occur if the school only uses the cloud to store administrative data. (2)

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QUESTION THREE

3.1. With the schools new technologies, it is suggested that all computers be connected to a network.

3.1.1. Briefly describe **three** additional hardware components that could be required to link the computers. (3)

3.1.2. State **two** advantages of networking computers in a school environment. (2)

3.1.3. It can also be disadvantageous to have a network. Name one disadvantage of having a network in a school environment. (1)

3.2. The principal of the school is planning to turn one of the classrooms into a second IT lab.

3.2.1. Name and briefly describe a network topology that you would consider to be suitable for a computer lab with networked computers. (2)

3.2.2. What media would you suggest for use within the LAN that is set up in the computer lab? Justify your answer. (4)

3.3. The school has decided that the new sponsored technologies will be wasted if learners are not given an opportunity to use them appropriately. So they are allowing learners to carry their mobile devices such as tables and laptops to access the school's internet and intranet.

3.3.1. Briefly describe how the learner could connect these devices to the school's network. (1)

3.3.2. What is the difference between the internet and the intranet (used at the school)? (2)

3.3.3: When other devices are connected to the network, the security of the network may be jeopardised. The technicians have to ensure that educator's and learner's data remains safe.

Explain the role of each of the following in ensuring that the network environment remains secure.

- a) Anti-virus software (2)
- b) A firewall (2)

3.4. The teachers choose to use their personal mobile devices to send and receive e-mails on the school's wireless network.

3.4.1. Push technology is used to send and receive e-mails on a mobile device. Explain what push technology is. (2)

3.4.2. E-mail attachments are usually not automatically downloaded on mobile devices. Give two reasons why this is the case. (2)

3.5. Teachers are encouraged to create podcasts of their lessons to promote e-learning. What is a podcast? (2)

3.6. The learners of the school wish to be a part of the conferencing going on with several schools in the area using Skype software.

3.6.1. Name the communications protocol that this software uses. (1)

3.6.2. State **two** advantages that Skype offers users over traditional telephone calls. (2)

3.7. The school has decided on ADSL connection.

3.7.1. Give two reasons why ADSL can be considered to be the best Internet connection option for the school. (2)

3.7.2. Name any other readily available Internet connection that may be used by the school. (1)

3.7.3. A firewall prevents unauthorised online access from outside the school network. Suggest two other measures that could be implemented to prevent unauthorised online access. (2)

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QUESTION FOUR

4.1. One of the characteristics of a computer that makes them so attractive is their accuracy. Their accuracy is, however, dependent on the quality of the data that has been input

4.1.1 One way to improve the quality of the data is to improve the validation in order to reduce the GIGO effect. What is the GIGO effect? (1)

4.1.2. Software designers speak of *data validation* and *data verification*. Both concepts can be used to improve the integrity of input data.
Briefly explain what these two concepts entail, illustrating your answer(s) with an example.(4)

4.1.3. One way to improve on the accuracy of input data is to obtain the data directly from instrumentation such as RFID tags
Briefly explain what RFID tags are (do not simply expand the acronym), highlighting the difference between active and passive tags in your explanation. (3)

4.1.4. Measures that are incorporated into programs in order to reduce the number of input errors include *format checks*, *range checks* and *presence checks*. For each of these checks, briefly describe how they are used to minimise input errors. (3)

4.2. The tables shown below form part of the database that the school has set up to store information about students and the books that they take out of the library

	tblStudents
PK	StudentRef
	FirstName
	Surname
	Cell
	DateOfBirth
	email

	tblBooks
PK	BookRef
	Title
	Authors
	Genre
	StudentRef
	Replace Cost

4.2.1. StudentRef and BookRef are the primary keys in the tables shown.

Give **TWO** factors that identify a field as a primary key. (2)

4.2.2. Briefly describe (identify) the relationship that should exist between these two tables, so that the user of the database could find out which books are taken by which students. (2)

4.2.3. The tables shown above do **not** meet the requirements for *first normal form*. Briefly explain why not. (1)

4.2.4. Write SQL code for the questions below:

a. Write code to determine the name and cell phone number of all students who were born before 1 April 1995. (3)

b. Write code to show a list of all books that have been taken out, along with the student (name and email address) who has the book. (3)

- c. Write an SQL statement that will alter the tblBooks table so that the replacement cost of all the Science Fiction books comes down by 15%. (3)

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QUESTION FIVE

5.1.

The screenshot shows a web form titled "Library User Entry Form." It contains the following fields and controls:

- Firstname:** A text input field.
- Surname:** A text input field.
- Class:** Two dropdown menus, one showing "11" and the other showing "A".
- Cell Number:** A text input field.
- Email:** A form with three input boxes separated by an "@" symbol, and a dropdown menu showing ".com".
- Add User:** A button at the bottom of the form.

The above screenshot shows the form that will be used to enter the user information of students who wish to use the library.:

- 5.1.1. What is the name of the components that are being used to input the Class of the user? (1)
- 5.1.2. Explain why these two components would not necessarily lead to a validated input. (2)
- 5.1.3. Critically assess the components and concept of the entry of an email address. (2)
- 5.2. Clicking the ADD USER button captures the information and checks it for errors before writing it to storage. The user of the program needs to be alerted to errors in the input data.
- a) Give **TWO** ways in which the software designer could alert the user to input errors. (2)
- b) Error *messages* form part of the software. Give **TWO** properties of good error messages. (2)
- 5.3. The designers of the software shown above are using **OOP** principles to create the software.
- 5.3.1. What does OOP stand for? (1)
- 5.3.2. Object classes may contain *methods*.
- a) Briefly describe the concept of a *method*. (1)
- b) Give **TWO** ways in which a *constructor* method can be differentiated from other methods that may lie within the object class? (2)
- c) "Methods are sometimes *overloaded*". Briefly explain what this statement means. (2)
- 5.4. The **digital root** of a non-negative integer is the (single digit) value obtained by an looping process of summing up the digits of the number, each time using the result from the previous iteration to compute a digit sum. The process continues until a single-digit number is reached.

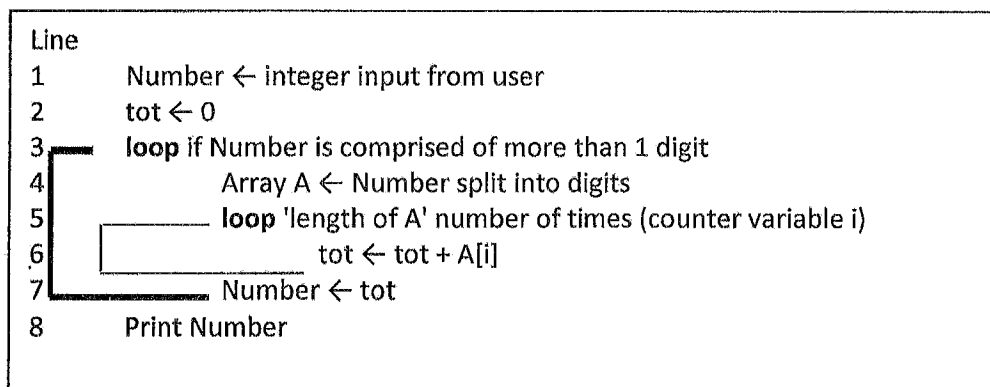
For example, the digital root of

65536 is 7,

because $6 + 5 + 5 + 3 + 6 = 25$ and $2 + 5 = 7$. (The algorithm stops because it has reached a single number)

The number of *times* the digits must be summed to reach the digital sum is called a number's *additive persistence*; in the above example, the additive persistence of 65536 is 2. (NB the *first* time the numbers were summed, an answer of 25 was obtained; the *second* time the numbers were summed, the answer of 7 was obtained, therefore the numbers were summed *twice*)

Examine the following algorithm:



5.4.1. You implement the given algorithm using a programming language, but then discover that when the program runs, it goes into an infinite loop.

Briefly explain why this is so. i.e. Explain the error in the algorithm. (2)

5.4.2. Explain what you would do to fix the algorithm, thereby getting it to print the digital root of the number. (1)

5.4.3. Carefully explain how you would change (add to) the algorithm so that it will print out the *additive persistence* as well. You should use line numbers to explain where your new lines will be added. (3)

5.5. *Logical errors* occur in a program when it runs, but produces unexpected results. These errors are sometimes elusive and can occur as a result of wrongly formed if statements.

Examine the following segments of code and briefly explain why each could possibly produce logical errors.

```
5.5.1. if (userAge > 3 && userLibBookOut == true || userGrade == 11)
{
    // body of code
}
```

(2)

```

5.5.2. if ( enteredAge > 0 && enteredAge < 10)
    {
        Print "your current age lies between 1 and 9"
        enteredAge = enteredAge + 5;
    }

```

```

If (enteredAge == 14)

```

```

{
    Print "your current age is 14"
    enteredAge = enteredAge + 5;
}

```

Print "you will be " + enteredAge + " in 5 years from now" (2)

5.6. Name **TWO** other main types of programming errors (besides logical errors) that are encountered when programming. (2)

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QUESTION 6

6.1 *Recently, a security company received an e-mail from an unauthorized source requesting the security password for the building. According to the e-mail, one of their employees had to urgently collect important documents from the building and he had forgotten the password.*

6.1.1 Which term is used when an unauthorized source uses an e-mail to try to convince someone to provide security-related information? (1)

6.1.2 A link in the e-mail navigated the user to a web page that looked almost exactly like that of the security company. What is this type of communication scam called? (1)

6.2 *Fingerprint readers are used for authorized access in many companies.*

6.2.1 What is technology such as a fingerprint reader called? (1)

6.2.2 Name TWO other examples of this type of technology that could also be used. (2)

6.3 *A database was planned and created by the database administrator at the your school. The data on all the educators and learners were entered into the database tables. All the educators have access to the database.*

6.3.1 Explain the difference between *data* and *information*. Use examples as part of your answer. (3)

6.3.2 Explain why record-locking is necessary when different educators/staff are working on the same table in a database. (2)

6.3.3 Besides planning and creating a database, name TWO other tasks that a database administrator has to perform as part of his/her duties. (2)

6.4 *Caution must be exercised when using Wi-Fi Internet access in public places such as coffee shops, airports and shopping malls, because malicious people can intercept their data when it is transmitted.*

6.4.1 What is *Wi-Fi*? (1)

6.4.2 Name TWO types of devices that are able to make use of Wi-Fi. (2)

- 6.4.3 Explain why connecting to a Wi-Fi network does not necessarily mean you will have *free* Internet access. (2)
- 6.4.4 Which term is used to refer to the practice of intercepting data packets on a network? (1)
- 6.4.5 For EACH of the following technologies, state whether or not it is able to protect your data from being intercepted and used. Clarify your answer in EACH case:
- (a) Firewall (2)
 - (b) Encryption (2)
 - (c) Virus scan (2)
- 6.4.6 You decide it is safer not to use any Wi-Fi networks. Suggest an alternative Internet connection which is portable and can be used almost anywhere. (1)
- 6.5 Due to the increasing availability of online information, such as travel blogs and forums, the tourism industry might find itself out of business.
- 6.5.1 Define a *travel blog*. (2)
- 6.5.2 Give TWO examples of how ICT can be used to assist potential 11rganizer in planning and 11rganizer11 their own holiday trips. (2)
- 6.6 A pamphlet received from a Mike's Game Reserve contained the following information:
- 98,9% of all tourists who visited South Africa in 2010 during the Soccer World Cup visited Mike's Game Reserve.**
- Someone queried this statistic, believing it to be incorrect. State THREE ways of verifying the trustworthiness of data/information. (3)
- 6.7 ADSL or a 3G Internet connection...
- 6.7.1 Expand the acronym 3G. (1)
- 6.7.2 State TWO possible problems that could occur when using a 3G connection. (2)
- 6.7.3 ADSL is an asymmetric service. Briefly explain what *asymmetric service* means. (1)
- 6.8. In a recent sporting event in South Africa, one of the organisers stumbled upon information on a social media website indicating that a specific athlete used a banned substance.
- 6.8.1 Give an example of a social media website that could have been used to publish this information about the athlete. (1)
- 6.8.2 Is the 11rganizer allowed to act upon this information? Motivate your answer. (2)
- 6.8.3 It was established that the profile does not belong to the athlete implicated. What kind of computer crime was committed against the athlete in this case? (1)

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10/10/2010



**THEORY INFORMATION TECHNOLOGY MEMO
SEPTEMBER 2014**

QUESTION 1 – MULTIPLE CHOICE.

B, D, A, C, D, B, B, D, A, A

QUESTION 2 – HARDWARE and SOFTWARE.

2.1.1.

CPU ✓ - Intel® Core i3 – accept reasonable GHz e.g. 1.6 upwards ✓
RAM ✓ - probably 2GB – 4GB ✓
HARD DRIVE ✓ - 200GB – 1 TB ✓ (accept a bit lower if necessary but make sure GB are used)

2.2

2.2.1 No ✓

2.2.2. Instructions that are anticipated are preloaded into cache ✓ which is a very fast form of memory (SRAM) ✓ located on, or close to, the CPU chip ✓

2.2.2 L1 – situated on the CPU chip, uses SRAM, and has a smaller size than L2
L2 = situated on motherboard (close to CPU chip), uses DRAM ✓ ✓

2.3

2.3.1. Instruction pipelines, Arithmetic pipelines, (or Graphics pipelines, software pipelines) ✓ ✓ (2)

2.3.2. Pipelines are a set of data processing elements connected in series, where the output of one element is the input of the next one. When the pipeline is full, the over throughput is increased. Information is held in buffers in the pipeline and passed through functional units in order to be processed in steps. (Choose any 3 points ✓ ✓ ✓)

2.4.

2.4.1. 700 MB (Accept 800 or 860 as these sizes are apparently also available) (1)

2.4.2. Flash drive/stick, external hard drives, DVD drives (accept BluRay) ✓ ✓ (Any two) – One mark for the reason being that the technology is newer and the storage capacities are greater ✓ (3)

2.4.3. The surface of a CD is made of a polycarbonate layer with a spiral track. The data are stored on the CD as a series of minute grooves which are known as 'pits' encoded on these spiral tracks. ✓ The burning process of a CD is nothing but creating a pattern of pits and lands over the polycarbonate layer. ✓ The Write Laser which is more powerful than the 'Read Laser' ✓, has the capability to alter the surface of CD instead of just bouncing the laser light off. During burning process, as per the data (binary values) the Write Laser bounces the light beam over the CD surface and creates a series of pits on it. (3)

2.5.

2.5.1. Basic Input Output System (1)

2.5.2. The BIOS contains firmware that controls hardware at a low level provides the user with a menu or set of options to configure the computer at the lowest level (you can change the settings stored in the CMOS) checks that all the important hardware (RAM, hard drive etc.) is present and working (this is called the POST – Power On Self-Test) locates and loads the operating system. ✓ ✓ ✓ ✓

2.6.

2.6.1. Without a dedicated video card, graphics-intensive software (such as video editing, photo editing, CAD – Computer Aided Design, 3D and games) can be very slow and unresponsive. ✓ In fact, many of these programs will not even work ✓ (2)

2.6.2. So that the built-in video is used when doing normal tasks because it uses much less power and battery life. ✓ (1)

QUESTION 3.

- 3.1.1 NIC – controller card fitted to the motherboard of the computer to interpret the data signals coming from/going to the network.
Switch – move packets of information directly to the PC that is connected to it thereby reducing network traffic
Cables – to carry the signals ✓✓✓ (3)
- 3.1.2 Sharing of resources (printers, Internet connection)
Communication (email, messaging etc)
Sharing of software (Central server installation that other computers can use) – sharing of data that can be put onto accessible disk drives
Entertainment (gaming) ✓✓ (ANY TWO VALID POINTS) (2)
- 3.1.3 Security (hacking) issues
Spread of viruses ✓ (ANY ONE VALID POINT) (1)
- 3.2.1. Star✓ brief description or drawing ✓ (2)
- 3.2.2. UTP cables✓ Cost effective, easy to lay, faster than WIFI which would be needed for a computer room✓ (ANY valid argument) (2)
- 3.3.1. Use Wifi Hotspots/Access Points (don't accept cabling as tablets are not usually connected this way) ✓ (1)
- 3.3.2. Internet is an external GAN while an Intranet is a computer network that uses Internet Protocol technology to share information or computing services *within an organization*.✓✓ (2)
- 3.3.3 a. Software that scans files and checks them against a known database of viruses, and then deletes (or quarantines) the offending file.✓✓
b. Firewall scans packets of information entering/leaving the network/PC checking to see if they belong to known software running on the computer (or they can say "checking the port numbers on the packets to see if they align with existing software ports on the computer)✓✓ (4)
- 3.4.1. VOIP✓ (4)
- 3.4.2. Calls are cheaper (particularly for international); can use view the caller via the video option✓✓ (2)
- 3.4.3. inappropriate use of resources (staff play with skype when they should be working), excessive bandwidth usage, security issues (open up the network to hackers)✓✓ (Any TWO reasonable answers) (2)
- 3.5.1. Secure Socket Layer✓ (1)
- 3.5.2. https as part of the URL ✓ Yellow lock on URL bar✓ (1)
- 3.5.3. Send SMSes to confirm secure transactions✓ (2)
Offer anti-virus or security software for you to install on your computer✓
Put public key encryption in place✓
Warn users about phishing scams✓
Enforce strong passwords✓
Design site to avoid the tricks of keystroke loggers✓
(ANY sensible THREE answers) (3)

3.5.4 Serial Number: Used to uniquely identify the certificate.
Subject: The person, or entity identified.
Signature Algorithm: The algorithm used to create the signature.
Signature: The actual signature to verify that it came from the issuer.
Issuer: The entity that verified the information and issued the certificate.
Valid-From: The date the certificate is first valid from.
Valid-To: The expiration date.
Public Key: The public key.
✓✓ (ANY TWO) (2)

QUESTION 4.

- 4.1.1. Garbage in Garbage out.. You can't expect sensible information from a system where rubbish has been input ✓
4.1.2. Validation – checking whether the input is possible/likely✓
e.g. checking whether a name has been input as numbers or whether a DOB lies within a certain range✓
Verification – tries to check if the data is true✓
Cross check with existing data (check dob against ID number), or other systems✓
4.1.3. RFID tags are chips that use electromagnetic fields to transfer stored data✓ Active RFID has a power source while passive gets its power from the reader✓ (4)
4.1.4. Format checks that data conforms to a certain style (e.g dd/mm/yyyy for date) ✓ (3)
Range checks check that data falls within the bounds/ what is expected e.g. M or F for gender
Presence checks check that at least something is there✓ (3)
4.2.1. Unique✓ can't be nothing✓
4.2.2. tblBooks.studentref must link to the primary key tblStudents.studentref✓ (2)
4.2.3. You can't have a possibility of many author(s) in one field✓ (2)
4.2.4. a. SELECT firstname, surname, cell
FROM tblStudents
WHERE DOB > #01/04/1995# (or similar correct) ✓✓✓ (1)
b. SELECT title, firstname, surname, email
FROM tblStudents, tblBooks
WHERE tblStudents.studentRef = tblBooks.studentRef ✓✓✓
c. UPDATE tblBooks
SET ReplaceCost = ReplaceCost – (ReplaceCost * 0.15) ✓✓✓ (9)
WHERE Genre = 'Science Fiction'

QUESTION 5.

- 5.1.1.1. Spinner✓ (1)
5.1.2. The combination of the two could lead to 11E, which may not be a valid class✓ (1)
5.1.3. Could lead to validated email address, but does not allow for presence checks or the user could still enter incorrect domains. It improves the chances of a validated address ✓✓ (2)
5.1.4. a. Red asterisks on wrong data, option pane popups. highlight (and/or) delete errors in fields (any TWO valid answers) ✓✓ (2)
b. Don't blame the user, say how to fix the error, use clear language, state what the error is without using obscure error codes, (any TWO valid answers)✓✓ (2)
5.2.1. Object Orientated Programming✓ (1)
5.2.2. a. A section of code within the object that define the behaviour of objects at program run time.(2) (or similar)
b. Method that runs when the class is instantiated✓ Method has the same name as the class✓ (2)
c. Methods have the same name, but different arguments (parameters)✓✓ (2)
5.2.3. Encapsulation allows selective hiding✓ of properties and methods in a class by building a wall to protect the code from accidental corruption✓ (2)
5.3.1. The variable tot never gets a chance to re-initialise to 0✓✓ (1)
5.3.2. Move line 20 to line 35 (or 45)✓ (1)
5.3.3. 15 addPersistence = 0
65 addPersistence ++
85 Print addPersistence ✓✓✓ (3)
5.4.1. && takes precedence over || and this might affect the meaning of what was intended by the statement.✓✓ (2)
5.4.2. The first IF statement affects the variable enteredAge, and this could impact on whether the second if statement runs or not. ✓✓ (or similar – give 2 marks if you can see they understand)
5.4.3. Syntax errors✓ Run-time errors✓ (2)

QUESTION 6

- 6.1.1. Data available anywhere there is an Internet connection ✓
Free storage space (up to certain limits) ✓
Relatively secure under most circumstances/Company backs up data for you ✓
(ANY 2 sensible answers) (2)
- 6.1.2. a. Programs/software e.g. word processor software that runs on your computer but is not installed on your computer ✓ GoogleDocs (Buzzword, Zoho, Etherpad, OpenGoo... There are many) ✓ (2)
- b. Don't have to upgrade
Often free (cheaper than buying)
Same 'software' available on any computer
Reduced compatibility issues ✓ ✓ (ANY TWO) (2)
- 6.2.1. White hat test security systems (employed by the company to hack) while Black hat are malicious and hack for self gain ✓ ✓ (2)
- 6.2.2. Social engineering refers to psychological manipulation ✓ of people into performing actions or divulging confidential information. ✓ (2)
- 6.2.3. Encrypting of private information before storing onto the cloud ✓ so that if the information is stolen it cannot be interpreted ✓ (2)
- 6.3.1. RAID 0 and 5 (similar in that they both write partial information onto separate disks – striping) ✓ (1)
- 6.3.2. Mirroring ✓ (1)
- 6.3.3. a. Solid state drive (disk) ✓ (1)
- b. They use sophisticated NAND flash memory ✓ to maintain storage without power
Device assembly is complex and therefore manufacturing costs are high ✓
Market share still lower than HDD ✓ (ANY ONE) (1)
- 6.4.1. Gathers data about the computer user (can be through keystroke loggers) and passes the info to a remote source by using the Internet connection ✓ ✓ (2)
- 6.4.2. a. text file ✓ used/accessed by your browser and passed to a site that you are navigating to streamline the process (saves your preferences/options) ✓ (2)
- b. Yes ✓ Other programs could access these preferences and/or security details ✓ (2)
- c. is any cookie that is recreated after deletion ✓ ✓ from backups stored outside the web browser's dedicated cookie storage. It may be stored online or directly onto the visitor's computer, in a breach of browser security. This makes them very difficult to remove.
(ANYTHING to say can't remove it / won't die) ✓ ✓ (2)