



# education

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Department:  
Education  
**REPUBLIC OF SOUTH AFRICA**

**NATIONAL  
SENIOR CERTIFICATE**

**GRADE 12**

**INFORMATION TECHNOLOGY P2**

**FEBRUARY/MARCH 2009**

**MEMORANDUM**

**MARKS: 180**

**This memorandum consists of 11 pages.**

**SECTION A: MULTIPLE-CHOICE QUESTIONS**

**QUESTION 1**

1.1 B ✓

1.2 A ✓

1.3 D ✓

1.4 D ✓

1.5 D ✓

1.6 A ✓

1.7 B ✓

1.8 C ✓

1.9 B ✓

1.10 D ✓

**TOTAL SECTION A: 10**

**SECTION B: HARDWARE AND SOFTWARE****QUESTION 2: HARDWARE AND SOFTWARE**

2.1.

- 2.1.1 4GB✓ (1)
- 2.1.2 ANY TWO ✓✓  
Edit graphics & movies  
Design things with CAD  
Work with large databases (2)
- 2.1.3 Movies, CAD, Databases  
can be several GB each file ✓✓ (2)
- 2.1.4 ANY TWO ✓✓  
Reduced heat, Static, Lower power consumption, No flicker, No  
Radiation, Easier on eyes (2)
- 2.1.5 (a) Core 2 Duo CPU has 2 CPUs ✓on the chip and Quad Core  
has 4 CPUs✓on the chip (2)
- (b) (i) Running a number of programs simultaneously  
Example: – Browser, Word processor, E-mail, Database✓(or  
any suitable example). (2)
- (ii) (Any TWO facts)  
Multi-tasking will take place ✓  
Tasks are distributed between the 4 CPUs ✓  
Multiprocessing will take place because of multiple  
processors (2)
- (c) (i) Cache memory is made from transistors ✓  
RAM from capacitors✓ (2)
- (ii) CPU needs cache to avoid waiting✓ for slower✓  
components (2)
- (iii) Block of data and instructions that the CPU probably  
needs next ✓will be fetched from RAM & placed in cache  
memory✓  
When CPU requires data/instructions cache is searched  
first ✓ (because cache matches speed of CPU) ✓  
If data/instructions needed is not found, new data &  
instructions are fetched from RAM (Any 4 facts) (4)

2.2

- 2.2.1 (a) Fewer peripherals available for firewire✓✓ (2)
- (b) ANY ONE ✓  
Video camera  
Video editing software (1)
- (c) Peripheral can be connected or disconnected ✓while the  
computer is running. ✓ (2)
- (d) USB hub✓ (1)

- 2.2.2 (a) Software which allows the operating system to communicate with/control a device ✓✓✓ (2)
- (b) NO ✓ Every device requires a driver ✓ (Answer NO may be implied – allocate mark) (2)
- (c) Check the cable – plugged in properly, into the correct port, power switched on ✓  
Uninstall and reinstall the device ✓  
Any other suitable solution (2)

2.3.

- 2.3.1 SATA ✓ (1)
- 2.3.2 Disc caching: Part of the RAM will be used ✓ to keep parts of the applications saved on the hard drive to be able to get faster access to the software. ✓ (2)
- 2.3.3 The type of hard drive which determines the data transfer rate ✓  
The access time  
Speed (1)

2.4.

- 2.4.1 (a) WiFi / 802.11\* ✓ (1)
- (b) ANY TWO ✓✓  
Slower, Range reduced, fewer simultaneous connections, unauthorized connections, hacking (2)
- 2.4.2 (a) UTP (CAT 5, CAT 6 etc.) ✓ (1)
- (b) Fibre Optic cable ✓ (1)
- 2.4.3 Star (1)

2.5

- 2.5.1 Linux ✓ (1)
- 2.5.2 Any column compared with OSS. One mark per row ✓✓✓✓

	OSS	Shrink W	Freeware	Shareware	
(a) Cost	Free / Pay for additional features & support	Only bought in shops	Free	Trial & then pay	(1)
(b) Distribution	Free to download / Buy a box	Sold in shops	Anyone can copy	Free to copy / distribute	(1)
(c) Support	Only if bought	Company that sells	None	Only after purchase	(1)
(d) Upgrade	Community developed	Company that sells	None / optional by developer	Company that sells	(1)

- 2.5.3 Multi-tasking: The OS appears to run several programs simultaneously ✓✓  
Multi-threading: Program separates itself into several independent threads. The OS runs the threads simultaneously ✓✓ (4)

**TOTAL SECTION B: 52**

## SECTION C: APPLICATIONS AND IMPLICATIONS

### QUESTION 3: e-COMMUNICATION

#### 3.1

- 3.1.1 ANY THREE ✓✓✓  
E-mail, sms, instant messaging, social network (Facebook), newsgroup, bbs, irc (3)

- 3.1.2 (a) Speed ✓ (1)  
(b) ANY TWO ✓✓  
Impersonal; bland - no tone, no expression, no facial expression, no body language (2)

- 3.2 ANY TWO ✓✓  
Authenticate source, Use reputable sites (e.g. ACM), cross- reference with reputable source, or any suitable (2)

- 3.3. ANY TWO  
Spyware: Software which covertly installs itself on a user's computer ✓ and tracks user activity ✓  
Spam Unsolicited commercial ✓ e-mail usually sent in bulk ✓  
Phishing E-mail intended to dupe the receiver into revealing personal financial details (4)

- 3.4 HTTPS ✓  
Padlock icon ✓ (2)

**[14]**

**QUESTION 4: SOCIAL AND ETHICAL ISSUES**

## 4.1

4.1.1 Moral guidelines✓ that govern the use of computers ✓ (2)

4.1.2 Other learners downloading the projects and handing the projects in as their own✓  
 People downloading the projects and using the project in presentations without the permission of the learners✓  
 Other learners using sections of the posted projects without the permission of the learners who designed the projects.  
 Any other suitable example – must be related to the projects.  
 ANY TWO (2)

## 4.2

4.2.1 Any example which shows that personal information has been extracted and misused to create the illusion that it originated from the victim (person poses as someone else on the Internet). ✓  
 Such as Facebook where users provide personal details in an insecure environment making it easy for anyone with basic knowledge to take the information and misuse it by posing as someone else.✓ (2)

4.2.2 These sites do not check to verify the identity of the people that use them✓ (1)

4.3 Separation of those who have access to and skills to utilise ICT✓ and those who do not. ✓ (2)  
**[9]**

**TOTAL SECTION C: 23**

**SECTION D: PROGRAMMING AND SOFTWARE DEVELOPMENT****QUESTION 5: ALGORITHMS AND PLANNING**

5.1 To uniquely identify a record.✓ Prevents duplicate records with the same primary key ✓ (2)

## 5.2

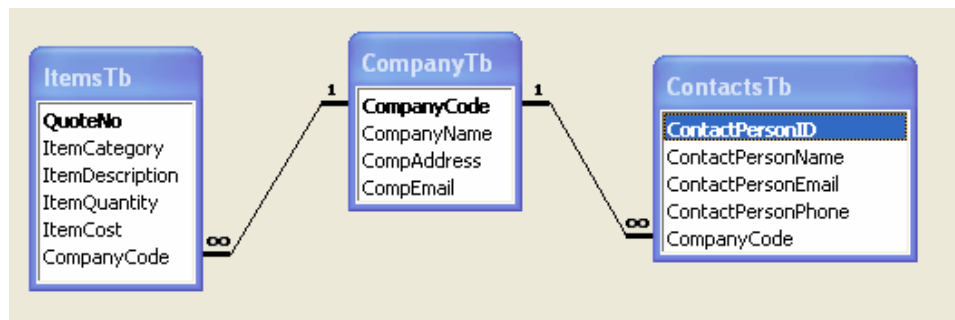
5.2.1 ItemQuantity – Number / Integer✓  
 ItemCost – Currency / real / double / decimal number✓ (2)

5.2.2 Too much information which may be repeated has to be inputted for each quote. ✓ E.g. any of the company details must be entered for every quote✓ (OR any other example that refers to the given data) (2)

5.2.3 Delete anomaly✓, Insert anomaly✓, Update anomaly✓ (Or correct descriptions) (3)

5.2.4

Company	Contacts	Quote
CompanyCode (PK)	ContactPersonID(PK)	QuoteNo(PK)
CompanyName	ContactPersonName	ItemCategory
CompAddress	ContactPersonEmail	ItemDescription
CompEmail	ContactPersonPhone	ItemQuantity
	CompanyCode (FK)	ItemCost
		CompanyCode (FK)



NOTE: 3 tables✓✓✓, (3)  
 Primary keys indicated✓✓✓, (3)  
 Contacts & Quote must have CompanyCode field to link to company table✓✓✓. (3)

5.2.5 Normalisation✓ (1)

5.3 Use an Input mask ✓ (1)

5.4

5.4.1 Validation rule ✓ (1)

5.4.2 ItemQuantity > = 100 ✓ and ✓ ItemQuantity <= 5000✓ (3)

5.4.3 Lookup Listbox✓ with the valid categories to choose from✓ (2)

5.5

5.5.1 ANY THREE ✓✓✓ (3)  
 SELECT: Lists items from a table  
 WHERE: Filters a list of records from a table according to a condition/conditions  
 DELETE: Removes records from a table  
 ORDER BY: Sorts a list of records from a table  
 INSERT: Inserts a new record to a table

- 5.5.2 (a) DELETE ✓ FROM QUOTES ✓ (no \* allowed) (2)  
 (b) SELECT CompName, ContactPersonName ✓ FROM Quotes  
 ✓ ORDER BY CompName ✓ (3)

5.6 Programming statements in Java or Delphi is NOT allowed as answer to any of these questions

- 5.6.1 loop from first character until current character is not a space ✓  
 After loop has been executed, delete all the character from the first one up to the character preceding the first non-space character ✓  
 (Or any other correct step-by-step solution) (2)

- 5.6.2 Start from the last character and loop towards the first character ✓  
 until a non-space character is found ✓  
 Delete from the character succeeding the last non-space character up to the last character ✓  
 (Or any other correct step-by-step solution) (3)

- 5.6.3 loop from first character to length of string ✓  
 if current character is not a space and the previous character is space ✓  
 change current character to uppercase ✓ (3)  
 (Or if the current character is a space and the next character is not a space  
 Change the next character to uppercase )  
 (Or any other correct step-by-step solution)

5.7

- 5.7.1 To generate a string designed by the programmer ✓ which will usually display the object fields (attributes/class variables) ✓ (2)

- 5.7.2 (a) Changes the values of the instance fields of the object. ✓ (1)  
 (b) Return information to the application program/class ✓ (1)

- 5.7.3 (a) Other classes (or application programs) must be able to call the methods (must have access to methods from outside the class) ✓ (1)  
 (b) To ensure that the fields belong ONLY to this specific object and cannot be accessed from outside the object ✓ (1)

**TOTAL SECTION D: 48**



**SECTION E: INTEGRATED SCENARIO****QUESTION 6**

## 6.1

- 6.1.1 (a) Internet Service Provider✓ (1)  
 (b) Allows their clients to connect to the Internet✓ (1)  
 (c) Internet Café provides equipment and connection and clients pay per hour of use. ✓  
 With an ISP you must provide your own equipment✓ (2)  
 (d) Wirelessly ✓no physical connection required, use a wireless adaptor / will be too expensive to install a physical connection✓ (2)
- 6.1.2 (a) Fibre Optic / Fibre Distributed Data Interface✓ (1)  
 (b) Any ONE  
 Both 3G and FDDI✓ (1)  
 (c) FDDI✓, faster and provides more bandwidth ✓ (2)  
 (d) Forwards packets around the internet/a network ✓choosing the best route (manage traffic on a network) ✓ Connect networks/segments of a network (Any TWO facts) (2)
- 6.1.3 (a) On-line journal for individuals using the internet✓ (1)  
 (b) ANY ONE✓  
 Updated more frequently  
 Contains personal opinions (1)

## 6.2

- 6.2.1 ANY TWO ✓✓  
 Runs additional software, Browse the internet, E-Mail, PIM (Personal Information Manager) (2)
- 6.2.2 YES✓ (1)
- 6.2.3 PDAs can't access the cellphone network✓ – no phone calls✓ (2)
- 6.2.4 Either with good reason✓  
 Symbian is freeware  
 Windows has a wider range of applications  
 Manufacturer only uses one or the other (e.g. Nokia/Sony – Symbian; HTC - Windows) (2)

## 6.3

- 6.3.1 ANY FOUR ✓✓✓✓  
 Don't send spam  
 Don't forward chain letters  
 Don't start/participate in flame wars  
 Don't type in all caps (shouting)  
 Don't give out personal information  
 Don't send large attachments  
 Use virus protection (4)
- 6.3.2 Spam takes up someone's time, bandwidth & computer resources ✓✓ (2)
- 6.3.3 Longer than 10 letters ✓  
 Vary uppercase, numerical & punctuation ✓  
 Do not use names, dictionary words, known numbers (ID/telephone/etc) ✓  
 Change password frequently ✓ (4)

## 6.4

- 6.4.1 (a) Uniform Resource Locator ✓ (1)  
 (b) [www.umlazicrafts.co.za](http://www.umlazicrafts.co.za)  
 need a full address - should name the organisation ✓, can be .co or .org ✓ and should be .za ✓ (3)
- 6.4.2 (a) Secure Socket Layer ✓ (1)  
 (b) Encryption is when clear and easy to read data is scrambled to protect it and make it unreadable. (1)  
 (c) The browser connects to the server using https and requests a secure connection ✓  
 The server sends the browser its public key ✓ and its certificate to prove who it is ✓  
 The browser generates the secret key ✓ that will only last for the duration of the communication session, encrypts the key using the server's public key and sends it to the server ✓  
 The server decrypts the secret key and now both has the secret key that they will use temporarily for the duration of this communication session ✓ (6)

## 6.5

- 6.5.1 IT takes away unskilled labour (things that can be automated/done by computer/robot) ✓  
 IT creates new jobs in the computer environment for people who can design, create, control, support, maintain software and hardware ✓ (2)

6.5.2 ANY TWO✓✓  
Better reporting, better record keeping, easier & more access to resources, better communication of syllabus/curriculum, better statistics and analysis (or other appropriate answers) (2)

**TOTAL SECTION E: 47**

**GRAND TOTAL: 180**