education

Department:
Education
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

MARKS: 180

This memorandum consists of 11 pages.

SECTION A: MULTIPLE-CHOICE QUESTIONS

QUESTION 1

1.1   B ü

1.2   A ü

1.3   D ü

1.4   D ü

1.5   D ü

1.6   A ü

1.7   B ü

1.8   C ü

1.9   B ü

1.10   D ü

TOTAL SECTION A: 10

SECTION B: HARDWARE AND SOFTWARE

QUESTION 2: HARDWARE AND SOFTWARE

2.1.

2.1.1	4GBü	(1)
2.1.2	ANY TWO üü Edit graphics & movies Design things with CAD Work with large databases	(2)
2.1.3	Movies, CAD, Databases can be several GB each file üü	(2)
2.1.4	ANY TWO üü 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 üon the chip and Quad Core
has 4 CPUsüon the chip　　　　　　　　　　　　　　　(2)

(b) (i) Running a number of programs simultaneously
Example: – Browser, Word processor, E-mail, Databaseü(or
any suitable example).　　　　　　　　　　　　　　(2)

(ii) (Any TWO facts)
Multi-tasking will take place ü
Tasks are distributed between the 4 CPUs ü
Multiprocessing will take place because of multiple
processors　　　　　　　　　　　　　　　　　　　(2)

(c) (i) Cache memory is made from transistors ü
RAM from capacitorsü

(ii) CPU needs cache to avoid waitingü for slowerü　(2)
components

(iii) Block of data and instructions that the CPU probably　(2)
needs next üwill be fetched from RAM & placed in cache
memoryü
When CPU requires data/instructions cache is searched
first ü (because cache matches speed of CPU) ü
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 firewireüü　　　(2)
(b) ANY ONE ü
Video camera
Video editing software　　　　　　　　　　　(1)
(c) Peripheral can be connected or disconnected üwhile the
computer is running. ü　　　　　　　　　　　　(2)
(d) USB hubü　　　　　　　　　　　　　　　　　(1)

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

2.3.

2.3.1   SATA ü   (1)

2.3.2   Disc caching: Part of the RAM will be usedü to keep parts of the
         applications saved on the hard drive to be able to get faster access
         to the software. ü   (2)

2.3.3   The type of hard drive which determines the data transfer rateü
         The access time
         Speed   (1)

2.4.

2.4.1   (a) WiFi / 802.11*ü   (1)
         (b) ANY TWOüü
              Slower, Range reduced, fewer simultaneous connections,
              unauthorized connections, hacking   (2)

2.4.2   (a) UTP (CAT 5, CAT 6 etc.) ü   (1)
         (b) Fibre Optic cable ü   (1)

2.4.3   Star   (1)

2.5

2.5.1   Linuxü   (1)

2.5.2   Any column compared with OSS. One mark per row üüüü

	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 ü ü
Multi-threading: Program separates itself into several independent
threads. The OS runs the threads simultaneously üü   (4)

TOTAL SECTION B: 52

SECTION C: APPLICATIONS AND IMPLICATIONS

QUESTION 3: e-COMMUNICATION

3.1

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

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

3.2   ANY TWO üü
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 computerü and
tracks user activityü
Spam   Unsolicited commercialü e-mail usually sent in bulk ü
Phishing E-mail intended to dupe the receiver into revealing personal
financial details   (4)

3.4   HTTPS ü
Padlock icon ü   (2)
[14]

QUESTION 4: SOCIAL AND ETHICAL ISSUES

4.1

    4.1.1   Moral guidelinesü that govern the use of computers ü   (2)

    4.1.2   Other learners downloading the projects and handing the projects in as their ownü
              People downloading the projects and using the project in presentations without the permission of the learnersü
              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). ü
              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.ü   (2)

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

4.3   Separation of those who have access to and skills to utilise ICTü and those who do not. ü   (2)

[9]

TOTAL SECTION C: 23

SECTION D: PROGRAMMING AND SOFTWARE DEVELOPMENT

QUESTION 5: ALGORITHMS AND PLANNING

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

5.2

    5.2.1   ItemQuantity – Number / Integerü
              ItemCost – Currency / real / double / decimal numberü   (2)

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

5.2.3　　Delete anomalyü, Insert anomalyü, Update anomalyü (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)
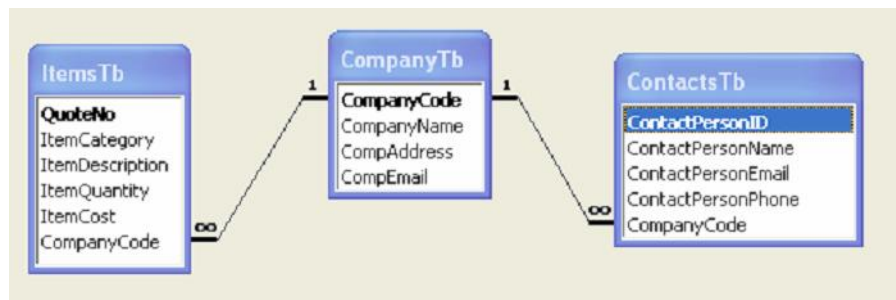
NOTE: 3 tablesüüü,　(3)
Primary keys indicatedüüü,　(3)
Contacts & Quote must have CompanyCode field to link to
company tableüüü.　(3)

5.2.5　　Normalisationü　(1)

5.3　Use an Input mask ü　(1)

5.4

5.4.1　　Validation rule ü　(1)

5.4.2　　ItemQuantity > = 100 üand üItemQuantity <= 5000ü　(3)

5.4.3　　Lookup Listboxü with the valid categories to choose fromü　(2)

5.5

5.5.1　　ANY THREE üüü
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　(3)

5.5.2   (a) DELETEü FROM QUOTESü (no * allowed)   (2)
         (b) SELECT CompName, ContactPersonName ü FROM Quotes
              ü ORDER BY CompName ü   (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 ü
                After loop has been executed, delete all the character from the first
                one up to the character preceeding the first non-space characterü
                (Or any other correct step-by-step solution)   (2)

       5.6.2   Start from the last character and loop towards the first characterü
                    until a non-space character is foundü

                Delete from the character succeeding the last non-space character
                up to the last characterü   (3)
                (Or any other correct step-by-step solution)

       5.6.3   loop from first character to length of stringü
                   if current character is not a space and the previous character is
                   spaceü
                       change current character to uppercaseü   (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 üwhich will
                usually display the object fields (attributes/class variables) ü (2)

       5.7.2   (a) Changes the values of the instance fields of the object. ü   (1)
                (b) Return information to the application program/classü   (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)
                ü   (1)
                (b) To ensure that the fields belong ONLY to this specific object
                and cannot be accessed from outside the object ü   (1)

                                              TOTAL SECTION D: 48

SECTION E: INTEGRATED SCENARIO

QUESTION 6

6.1

6.1.1	(a) Internet Service Providerü	(1)
	(b) Allows their clients to connect to the Internetü	(1)
	(c) Internet Café provides equipment and connection and clients pay per hour of use. ü	
	With an ISP you must provide your own equipmentü	(2)
	(d) Wirelessly üno physical connection required, use a wireless adaptor / will be too expensive to install a physical connectionü	(2)

6.1.2	(a) Fibre Optic / Fibre Distributed Data Interfaceü	(1)
	(b) Any ONE	
	Both 3G and FDDIü	(1)
	(c) FDDIü, faster and provides more bandwidth ü	(2)
	(d) Forwards packets around the internet/a network üchoosing the best route (manage traffic on a network) ü Connect networks/segments of a network (Any TWO facts)	(2)

6.1.3	(a) On-line journal for individuals using the internetü	(1)
	(b) ANY ONEü	
	Updated more frequently	
	Contains personal opinions	(1)

6.2

6.2.1	ANY TWO üü	
	Runs additional software, Browse the internet, E-Mail, PIM (Personal Information Manager)	(2)

6.2.2	YESü	(1)

6.2.3	PDAs can't access the cellphone networkü – no phone callsü	(2)

6.2.4	Either with good reasonü	
	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 FOURüüüü
              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
              resourcesüü   (2)

    6.3.3   Longer than 10 lettersü
              Vary uppercase, numerical & punctuationü
              Do not use names, dictionary words, known numbers
              (ID/telephone/etc) ü
              Change password frequentlyü   (4)

6.4

    6.4.1   (a)   Uniform Resource Locatorü   (1)
              (b)   www.umlazicrafts.co.za
                       need a full address - should name the organisationü, can be
                       .co or .org ü and should be .za ü   (3)

    6.4.2   (a)   Secure Socket Layerü   (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 connectionü
                       The server sends the browser its public key üand its
                       certificate to prove who it isü
                       The browser generates the secret keyüthat will only last for
                       the duration of the communication session, encrypts the key
                       using the server's public key and sends it to the serverü
                       The server decrypts the secret key and now both has the
                       secret key that they will use temporarily for the duration of
                       this communication sessionü   (6)

6.5

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

6.5.2   ANY TWOüü
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