

GAUTENG DEPARTMENT OF EDUCATION**SENIOR CERTIFICATE EXAMINATION****COMPUTER STUDIES SG
(Second Paper: Theory)**

**QUESTION 1
COMPUTER ARCHITECTURE**

- 1.1.1 ROM (A3)
- 1.1.2 &
1.1.3 Two of: Intel, Motorola, etc (B3 & B4)
- 1.1.4 &
1.1.5 Two of: Stiffy disk, CD, zip drive disk, etc (C2 & C3)
- 1.1.6 One of: Printer, speakers (D2) (6)
- 1.2 Stores data and instructions (1)
- 1.3.1 B
- 1.3.2 C or C1
- 1.3.3 B
- 1.3.4 A (or C – hard disk)
- 1.3.5 B
- 1.3.6 C
- 1.3.7 A (7)
- 1.4.1 internal bus (or data bus)
- 1.4.2 external bus (2)
- 1.5 ROM (1)
- 1.6 Carries read/write signals from CPU to RAM (2)
- 1.7.1 IDE, SCSI (2)
- 1.7.2 Converts file names to tracks/sectors etc on hard disk, so that file can be found on hard disk (1)

- 1.8.1 A single instruction is executed on multiple data. (2)
- 1.8.2 Improved graphics and multimedia (1)
- 1.9.1 Internal modem – cheaper
External modem – can remove and use on other computer, if struck by lightning less damage to computer (according to some people) (1)
- 1.9.2 any one of: ISA, PCI, USB (1)
- 1.10 Any three of:
 - can plug in up to 127 devices
 - fast data transfer rate
 - supports Plug and Play
 - can daisy chain devices
(3)
[30]

QUESTION 2
SYSTEM SOFTWARE

- 2.1.1 (B) the operating system on this computer is a multi-tasking system
- 2.1.2 (D) MSWord must be closed
- 2.1.3 (B) Area marked A is displayed by the operating system
- 2.1.4 (B) utility software, which is part of system software (4)
- 2.2.1 C
- 2.2.2 B
- 2.2.3 A
- 2.2.4 D (4)
- 2.3.1 Power On Self Test (1)
- 2.3.2 Tests whether all components are in working order (2)
- 2.3.3 BIOS (Basic Input Output System) (1)
- 2.4 Windows 2000; Apple Macintosh; Linux (3)
- 2.5 Two of:
Windows NT; Novell, OS/2; Linux, Windows 2000 Server; Lantastic,
Novell Lite (2)
- 2.6 Store data regarding software on the computer; settings of computer (1)

- 2.7 Cleans desktop of unused icons; automatic updates of XP; automatic installation of devices that were detected (better than previous Plug and Play)
... expand this list just before marking session (2)
[20]

**QUESTION 3
BOOLEAN ALGEBRA**

- 3.1.1 $(1' + 0).1 = (0 + 0).1 = 0.1 = 0$ (2)
- 3.1.2 $(0 + 1)' + 1.0 = (1)' + 0 = 0 + 0 = 0$ (2)
- 3.2.1 Limpopo and professional
- 3.2.2 swimming and not Gauteng
- 3.2.3 One of:
 - (soccer or rugby) and professional
 - professional and (soccer or rugby)
(6)
[10]

**QUESTION 4
DATA COMMUNICATIONS**

- 4.1.1 Can communicate in both directions at the same time. (2)
- 4.1.2 Several bits are being transferred at the same time. (1)
- 4.1.3 Listening in on digital communication; doing so without connecting to the cables physically (2)
- 4.1.4 Sending of data, and receiving of data is done without checking that both parties are ready; happens at different times. (2)
- 4.2 The checksum method applies a given algorithm to produce a certain code. When a document is verified, the test is whether application of the same algorithm produces the same code. (2)
- 4.3.1 hub (1)
- 4.3.2 bus topology (*Sketch must show central cable, and that all computers are connected to central cable.*)
ring topology (*Sketch must show computers connected in a ring formation.*) (4)
- 4.3.3 specific rate of data transfer
types of cables
topology (3)

- 4.3.4 Any three of:
• can share printers
• everyone on network has access to shared data/programs
• security of data on network, etc (3)
- 4.3.5 a protocol (1)
- 4.4.1 Any two of:
• transmits data using light
• inner core, outer core around the same axis
• does not conduct lightning
• expensive (2)
- 4.4.2 One of:
• Has the WAP protocol
• can interpret and display Internet pages that were written in WML (1)
- 4.4.3 microwave (1)
- 4.4.4 No – a MAN is limited to one city; this company has offices in Cape Town and London (2)
- 4.4.5 A firewall is a system which prevents unauthorised access to the network. (2)
- 4.4.6 Two of: make backups, install anti-virus, lock up securely. (2)
- 4.5.1 B active hub
- 4.5.2 D gateway
- 4.5.3 C bridge
- 4.5.4 A intelligent hub or switch (4)

[35]

QUESTION 5
INTERNET AND NEW TECHNOLOGY

5.1.1 www.google.com	D. A search engine
5.1.2 hyperlink	G. A word or icon which, when clicked, results in a different Internet page being loaded
5.1.3 Netscape Navigator	E. A web browser
5.1.4 jenny@yaho.com	F. An e-mail address
5.1.5 192.439.23.15	A. An IP address
5.1.6 Mweb	B. The name of an ISP
5.1.7 www.ananzi.co.za	C. A South African search engine

(7)

5.2 Markup language is used to write documents which are to be displayed by an Internet browser.

(2)

5.3.1 ac/gov - refers to the type of organization

5.3.2 de/za - refers to the country

(2)

5.4.1 G

5.4.2 D

5.4.3 E

5.4.4 B

(4)

5.5.1 False

5.5.2 False

5.5.3 True

(3)

5.6 floppy disk
Flash memory

(2)

[20]

QUESTION 6
SOCIAL IMPLICATIONS

- 6.1.1 Two of:
- can spread information (e.g. about health) across the whole world
 - can trade on Internet globally
 - can communicate via e-mail globally

(2)

- 6.1.2 Two of:
- children get access to unsuitable information
 - danger of hackers
 - danger of Internet banking crime
 - danger of stealing of information
- (2)
- 6.2.1 Two of:
- eye strain
 - tennis elbow
 - backache due to bad posture in front of computer
 - poorer health due to lack of exercise
 - radiation from monitors
- (2)
- 6.2.2 One of:
- can find information about illnesses, cures
 - use of computers in the medical field (aid in diagnosis, scanning, etc)
- (1)
- 6.3.1 A digital signature is a code that is used to check that a document was indeed sent by the person who is stated to be the sender, not someone else.
- (2)
- 6.3.2 Contains specific data about a website or software, which uniquely identifies that site or software.
- (2)
- 6.3.3 The receiver of a message receives a key from the sender which is used to verify that the document is from the sender.
- (1)
- 6.4 Three of:
- sending statements by e-mail instead of posting them
 - communicating by e-mail instead of phoning saves time
 - communicating by e-mail instead of phoning saves money
 - e-mail – one has a written record of statements that one has made
- (3)
[15]

QUESTION 7 APPLICATION PACKAGES

- 7.1.1 One of:
- CorelDraw
 - Accpac
 - Notepad
- (1)
- 7.1.2 One of:
- Excel
 - Powerpoint
 - Access
- (1)

	Program	System software? (Write "yes" or "no")	What is it used for?
7.2.1	Paint	no	one or both of: <ul style="list-style-type: none"> ▪ view images ▪ draw pictures
7.2.2	Defrag	yes	<i>to let the operating system rearrange files on disk, for more efficient storage and access</i>
7.3.3	System monitor	yes	<i>view current use of kernel, memory, etc, i.e. see how well system is running</i>

		(6)
7.3.1	Create web pages	(1)
7.3.2	Antivirus software	(1)
7.4.1	15	
7.4.2	13	
7.4.3	7	
7.4.4	poor	(4)
7.5.1	One of: <ul style="list-style-type: none"> • Because there already is a Jenny in the Name field • Because the Name field is a primary key, and already has Jenny in it actually any answer that indicates that a <i>primary key cannot have duplicate values</i> 	(1)
7.5.2	One of: <ul style="list-style-type: none"> • Change the primary key to ID number. • Add an ID field of autonumber type, and make that the primary key. actually any answer that indicates that Name must <i>not</i> be the primary key 	(1)
7.6.1	One of: <ul style="list-style-type: none"> • >11 and < 19 • >= 12 and < 19 • >= 12 and <= 18 • >11 and <= 18 <i>one mark for the lower limit, one mark for the upper limit</i>	(2)
7.6.2	Grd11 Grd	(2)
		[20]
	TOTAL:	150

GAUTENGSE DEPARTEMENT VAN ONDERWYS

SENIORSERTIFIKAAT-EKSAMEN

REKENAARSTUDIE SG
(Tweede Vraestel: Teorie)

VRAAG 1
REKENAARARGITEKTUUR

- 1.1.1 ROM (A3)
- 1.1.2 &
1.1.3 Twee van: Intel, Motorola, ens. (B3 & B4)
- 1.1.4 &
1.1.5 Twee van: Stiffy disket, CD, zip disket, etc (C2 & C3)
- 1.1.6 Een van: drukker, luidsprekers (D2) (6)
- 1.2 Stoor data en instruksies (1)
- 1.3.1 B
- 1.3.2 C of C1
- 1.3.3 B
- 1.3.4 A (of C – hardeskyf)
- 1.3.5 B
- 1.3.6 C
- 1.3.7 A (7)
- 1.4.1 interne bus (of databus)
- 1.4.2 eksterne bus (2)
- 1.5 ROM (1)
- 1.6 Dra lees/skryf seine vanaf die SVE na RAM (2)
- 1.7.1 IDE, SCSI (2)
- 1.7.2 Omskep lêername na "tracks/sectors" op die hardeskyf, sodat die lêer gevind kan word op die hardeskyf (1)

- 1.8.1 'n Enkele instruksie word uitgevoer op 'n veelvoudige data (2)
- 1.8.2 Verbeterde grafika en multimedia (1)
- 1.9.1 Interne modem – goedkoper
Eksterne modem – kan dit verwyder en op 'n ander rekenaar gebruik;
indien deur weerlig geslaan is daar minder skade aan die rekenaar
(- volgens sekere bronne) (1)
- 1.9.2 enigeen: ISA, PCI, USB (1)
- 1.10 Enige drie van:
 - kan tot 127 toestelle daar inprop
 - vinnige data-oordragspoed
 - ondersteun "Plug and Play"
 - kan toestelle in 'n "daisy chain" plaas
(3)
[30]

VRAAG 2 STELSELPGRAMMATUUR

- 2.1.1 (B) die bedryfstelsel van hierdie rekenaar is 'n multi-taakstelsel
- 2.1.2 (D) MSWord moet afgesluit word
- 2.1.3 (B) Gedeelte wat A gemerk is, word deur die bedryfstelsel vertoon
- 2.1.4 (B) nutspaket, wat deel is van stelselprogrammatuur (4)
- 2.2.1 C
- 2.2.2 B
- 2.2.3 A
- 2.2.4 D (4)
- 2.3.1 "Power On Self Test" (1)
- 2.3.2 Toets of alle komponente in werkende orde is (2)
- 2.3.3 BIOS (Basic Input Output System) (1)
- 2.4 Windows 2000; Apple MacIntosh; Linux (3)
- 2.5 Twee van:
Windows NT; Novell, OS/2; Linux, Windows 2000 Server; Lantastic,
Novell Lite (2)
- 2.6 Stoor data aangaande die programmatuur op die rekenaar; "settings" van
die rekenaar (1)

- 2.7 Maak die desktop skoon van ongebruikte "icons"; outomatiese opdatering van XP; outomatiese installering van toestelle wat raakgesien word (beter as vorige Plug and Play)
brei lys uit net voor nasiensessie (2)
[20]

**VRAAG 3
BOOLE ALGEBRA**

- 3.1.1 $(1' + 0).1 = (0 + 0).1 = 0.1 = 0$ (2)
- 3.1.2 $(0 + 1)' + 1.0 = (1)' + 0 = 0 + 0 = 0$ (2)
- 3.2.1 Limpopo en professioneel
- 3.2.2 swem en nie Gauteng
- 3.2.3 Een van:
 - (sokker of rugby) en professioneel
 - professioneel en (sokker of rugby)
(6)
[10]

**VRAAG 4
DATAKOMMUNIKASIE**

- 4.1.1 Kan terselfdertyd in altwee rigtings kommunikeer. (2)
- 4.1.2 Verskeie bisse word gelyktydig versend. (1)
- 4.1.3 Inluister op digitale kommunikasie, sonder om fisies met die kables te konnekteer (2)
- 4.1.4 Stuur en ontvang van data word gedoen sonder om eers seker te maak dat albei partye gereed is; stuur en ontvang geskied op verskillende tye (2)
- 4.2 Die "checksum" metode behels die toepassing van 'n gegewe algoritme om 'n sekere kode te skep. Wanneer 'n dokument getoets word, word daar gekyk of die toepassing van dieselfde algoritme weer dieselfde kode tot gevolg het. (2)
- 4.3.1 hub (1)
- 4.3.2 bustopologie (*Skets moet die sentrale kabel wys, asook dat alle rekenaars met die sentrale kabel verbind is.*)
ringtopologie (*Skets moet wys dat rekenaars in 'n ringformasie verbind is.*) (4)
- 4.3.3 spesifieke data oordragspoed
tipe kables
topologie (3)

- 4.3.4 Enige drie van:
- Kan drukkers deel
 - Elkeen op die netwerk het toegang tot gedeelde programmatuur
 - Sekuriteit van data op die netwerk, ens. (3)
- 4.3.5 'n protokol (1)
- 4.4.1 Enige twee van:
- versend data deur die gebruik van lig
 - binneste deel, en buitenste deel, rondom dieselfde as
 - gelei nie weerlig nie
 - duur (2)
- 4.4.2 Een van:
- Het die WAP protokol
 - kan Internetbladsye wat in WML geskep is, interpreteer en vertoon (1)
- 4.4.3 mikrogolf (1)
- 4.4.4 Nee – 'n MAN is beperk tot een stad; hierdie maatskappy het kantore in Kaapstad en Londen (2)
- 4.4.5 'n "Firewall" is 'n stelsel wat ongemagtigde toegang tot die netwerk voorkom. (2)
- 4.4.6 Twee VAN: Maak rugsteun-kopieë, installeer anti-virus, sluit veilig toe. (2)
- 4.5.1 B aktiewe hub
- 4.5.2 D "gateway" (deurgangspoort)
- 4.5.3 C bridge
- 4.5.4 A intelligente hub of "switch" (4)

VRAAG 5
INTERNET EN NUWE TEGNOLOGIE

5.1.1 www.google.com	D. 'n Soekenjin
5.1.2 hyperlink	G. Woord of "icon" wat, wanneer daarop geklik word, die gevolg het dat 'n ander Internet bladsy gelaai word
5.1.3 Netscape Navigator	E. Webblaaier
5.1.4 jenny@yaho.com	F. 'n E-posadres
5.1.5 192.439.23.15	A. 'n IP-adres
5.1.6 Mweb	B. Die naam van 'n ISP
5.1.7 www.ananzi.co.za	C. 'n Suid-Afrikaanse soekenjin

(7)

5.2 'n "Markup language" word gebruik om dokumente te skryf wat deur 'n Internet webblaaier vertoon gaan word.

(2)

5.3.1 ac/gov - verwys na die tipe organisasie

5.3.2 de/za - verwys na die land

(2)

5.4.1 G

5.4.2 D

5.4.3 E

5.4.4 B

(4)

5.5.1 Vals

5.5.2 Vals

5.5.3 Waar

(3)

5.6 floppy disket
Flash geheue

(2)

[20]

VRAAG 6
SOSIALE IMPLIKASIES

6.1.1 Twee van:

- kan inligting (bv. oor gesondheid) oor die hele wêreld versprei
- kan wêreldwyd handel dryf oor die Internet
- kan wêreldwyd kommunikeer deur middel van e-pos

(2)

- 6.1.2 Twee van:
- kinders kry toegang tot onvanpaste inligting
 - gevaar van krakers ("hackers")
 - gevaar van diefstal met Internet banktransaksies
 - gevaar van steel van inligting
- (2)
- 6.2.1 Twee van:
- oogspanning ("eye strain")
 - tennis-elmboog
 - rugpyn a.g.v. swak postuur voor rekenaar
 - swakker gesondheid te wyte aan gebrek aan oefening
 - bestraling deur monitors
- (2)
- 6.2.2 Een van:
- kan inligting vind oor siektes, geneesmiddels
 - gebruik van rekenaars in die mediese veld (help met diagnosering, skandering, ens)
- (1)
- 6.3.1 'n Digitale handtekening is 'n kode wat gebruik word om te kyk of 'n dokument wel gestuur is deur die persoon van wie dit veronderstel is om te kom, en nie deur iemand anders nie.
- (2)
- 6.3.2 Bevat spesifieke inligting aangaande 'n webtuiste of programmatuur, wat daardie webtuiste of programmatuur op 'n unieke wyse identifiseer.
- (2)
- 6.3.3 Die ontvanger van die boodskap kry 'n sleutel van die sender wat gebruik moet word om te bevestig dat die dokument wel van daardie sender af kom.
- (1)
- 6.4 Drie van:
- stuur rekeninge per e-pos i.p.v om dit te pos
 - kommunikeer deur e-pos i.p.v. per telefoon spaar tyd en geld
 - e-pos – 'n mens het 'n skriftelike bewys van stellings wat gemaak is
- (3)
[15]

VRAAG 7 TOEPASSINGSPROGRAMMATUUR

- 7.1.1 Een van:
- CorelDraw
 - Accpac
 - Notepad
- (1)
- 7.1.2 Een van:
- Excel
 - Powerpoint
 - Access
- (1)

	Program	Stelselsagteware? (Skryf "ja" of "nee")	Waarvoor word dit gebruik?
7.2.1	Paint	nee	een of altwee van: <ul style="list-style-type: none"> • kan na prentjies kyk • kan prentjies teken
7.2.2	Defrag	ja	<i>om die bedrystelstelsel die lêers op die hardeskyf te laat herrangskik, vir meer effektiewe storing en toegang</i>
7.3.3	System monitor	ja	<i>kyk na die huidige gebruik van die kern, geheue, m.a.w. om te sien hoe goed die stelsel vaar</i>

(6)

7.3.1 Skep webbladsye (1)

7.3.2 Antivirus-programmatuur

7.4.1 15

7.4.2 13

7.4.3 7

7.4.4 swak (4)

7.5.1 Een van:

- Omdat daar reeds 'n "Jenny" in die **Naamveld** is.
- Omdat die **Naamveld** 'n primêre sleutel is, en dit reeds 'n "Jenny" het. enige antwoord wat aandui dat die *primêre sleutel nie gedupliseerde waardes mag hê nie*

(1)

7.5.2 Een van:

- Verander die primêre sleutel na 'n ID-nommer.
- Voeg 'n ID-veld van die "autonumber" tipe by, en maak dit die primêre sleutel
.... enige antwoord wat wys dat **Naam** *nie* die primêre sleutel mag wees nie

(1)

7.6.1 Een van: (*Let wel: antwoorde moet in Engels voorkom soos hier aangedui*)

- >11 and < 19
- >= 12 and < 19
- >= 12 and <= 18
- >11 and <= 18

Een punt vir die onderste limiet, een punt vir die boonste limiet (2)

7.6.2 Grd11 [20]
Grd**TOTAAL: 150**