GAUTENG DEPARTMENT OF EDUCATION

PREPARATORY EXAMINATION

INFORMATION TECHNOLOGY
(Paper 2)

POSSIBLE ANSWERS

1.1 D

1.2 C

1.3 A

1.4 B

1.5 B

1.6 D

1.7 D

1.8 B

1.9 D

1.10 B 1x10=(10)
[10]

2.1 Old technology, most OS come on a CD for installation (any 1) (1)

2.2 2.2.1 LCD screen (1)

2.2.2 Clear screen, easier on the eyes, refresh is not visible, less flickering, cannot get CRT screens (any 2) (2)

2.2.3 CRT✓ – cheaper, not used all the time✓ (2)

2.3 Servers need to connect to each other and to the rest of the network (1)

2.4 Windows Server 2003 or any server software (1)

2.5 Fast memory as data is processed on rise✓ and fall of signal✓ -or double data rate✓ (2)

2.5	2.6.1	User profiles that only have access to some programmes✓ Passwords required to get into all programmes ✓ restrict users in sharing and securities of shared folders✓ (any 2)	(2)
	2.6.2	Adding / deleting users, checking security, providing updates for software, managing network peripherals, create accounts, set up securities, maintain data integrity, load programs (any 3)	(3)
	2.6.3	Update and delete user on db, maintain db, refresh and update data, write updates as requested. Essential for data to be correct and up to date to be able to contact patients, manage accounts (any 1)	(1)
2.6	2.7.1	Universal Serial Bus	(1)
	2.7.2	Supply some power to peripherals, many peripherals can be daisy chained, faster devices can be connected to the computer (any 2)	(2)
	2.7.3	To detect device ✓and install necessary drivers✓ to enable the hardware to function correctly	(2)
2.8	2.8.1	To share data✓/peripherals✓/share software (any 2)	(2)
	2.8.2	Client–server –more security/do not have to load programs on each machine/ rely on network for printing/ do not need large disk capacity (any 2)	(2)
	2.8.3	Wireless Local Area Network	(1)
	2.8.4	WLAN – advan – no physical wires, connect with radio waves, flexibility / portability (any 1) ✓ Disadvan – devices using this LAN need built in wireless card/ interference / range of radio waves (any 1) ✓	(2)
	2.8.5	Advantage – easy to troubleshoot/easy to add more computers/ (any 2) Disadvantage – if central hub fails network is down/use more cabling lots of cables lying around (any 2)	(4)
	2.8.6	UTP ✓– cheap/easy to install/short distances ✓	(2)
	2.8.7	To connect to the Internet/to send and receive data efficiently	(1)
2.9	2.9.1	Pipelining – At each stage, instructions are only partly processed and the computer is in a position to read new instructions from the memory✓ before processing of the others is completed. ✓	(2)
	2.9.2	Cache memory holds instructions and data✓ likely to be used next and saves time sending to memory each time. ✓	(2)

2.10	2.10.1	The computer uses space on the hard drive to fool the computer into thinking that there is more RAM than there actually is✓	(1)
	2.10.2	The computer will be able to hold more instructions and will be faster✓	(1)
	2.10.3	The operating system creates pages / ✓swap files and swaps part of the program / data that is being used presently✓ between RAM and hard drive	(2)
2.11	2.11.1	multiple hard drives – at least 5✓	(1)
	2.11.2	Data is broken into blocks✓ and distributed across discs ✓as a way of creating a larger, faster virtual disc	(2)
2.12	2.12.1	CD/DVD/flash disk (any 1)	(1)
	2.12.2	Tape/external drives. (any 1)	(1)
2.13	2.13.1	They are not happy about changing to a different operating environment/think that you have to be a boffin to understand open source✓ ✓ (any 2 sensible reasons)	(2)
	2.13.2	(a) Linux✓	(1)
	2.13.3	(b) open office✓	(1) **[51]**
3.1	3.1.1	http://www.vnunet.com/vnunet/news/2126568/phishing-against-banks-hits	(1)
	3.1.2	Internet fraud where a fake email requests you to click on a link to a website that looks official ✓ so that you update account details and pin numbers These are then used to draw money from your account✓	(2)
	3.1.3	ID theft is using someone's identity electronically✓, to pose as that person without their permission ✓whereas in phishing scams the information is supplied openly	(2)
	3.1.4	https or the yellow padlock ✓	(1)
3.2	3.2.1	Audio or video newsletter that can be played/viewed on a portable media player ✓	(1)
	3.2.2	To be able to listen to programmes when they are awake or feeling better or not sedated (any reasonable answer) ✓	(1)

3.3 3.3.1 A program that continually scans✓ your computer for information and sends it off to the person✓ who created the Trojan (2)

3.3.2 The virus can no longer do what it was supposed to do although it is still present on the computer. (1)

3.4 email✓, on any social networking site ✓ (2)

3.5 Yes – uses up bandwidth/not good sites to visit/doesn't allow other users time to work✓ Can be restricted by changing security setting on Internet explorer/restrict log on profiles✓ **OR**
NO – most users can only work for a short time as they get very tired / a booking system could be put in place/could not allow downloads of any sort (2)

3.6 3.6.1 Hardware or software that prevents unauthorised users from gaining access to the network. ✓ (1)

3.6.2 Blocks attempts from computers on the Internet to gain access to unauthorised ports, ✓ monitors attempts by software✓ on your computer to connect to the Internet (2)

3.7 Cost of servers, do not need to pay for so many licences, information can be stored off site (safer) (any 2) (2)

QUESTION 4

4.1 Loop through to the end of the address to check character by character for vowels ✓✓
Build up new string ✓without vowels
Copy the first 4 letters from the identity number and add to the string✓✓
Check if this new string exists in the text file ✓,
If not: Generate a random number ✓
Check that this number is between 600 and 9999✓, and add to the string in correct sequence✓. (10)
Then write the string to the file✓

4.2 4.2.1 SELECT Patientname✓, Round✓ (days *734.65,2)✓✓ as COST✓
FROM CHOLERA✓ (6)
OR
use format ✓ (days *734.65✓, "currency" ✓)

4.2.2 UPDATE ✓CHOLERA✓
SET Released = True ✓✓
WHERE days_in_ward ✓= 7✓ (6)

4.3 4.3.1 (a) to identify unique records (1)
(b) Problem – more than 1 patient in same bed & ward. ✓
none of the existing fields – add PatientID✓ (2)

4.3.2 between 0 and 7 / > 0 and < 7 / > 0✓ and✓ <✓= 6✓
(any correct combination) (4)

4.4 4.4.1 Remove repeating groups of data✓
Each table must have primary key✓
Remove data with multiple values✓
No partial dependencies (all data must depend on primary key)
No values must depend on a field that is not part of the primary key ✓ (4)

4.4.2 (a) DoctorID (1)
(b) join DoctorID to Pracnum (1)
(c) one patient ✓can be seen by many doctors✓ (2)
(d)

	Patient table		Link✓ table		Doctor table
	PID	¦----------✓∞	**PID**		Surname
	Surname		**DID**✓	∞✓------ ¦	DID
	Initial		Medicine✓		initial
	Ward				Prnum
	Bed				

(5)

4.5 The values are sent in value parameters ✓and should be returned via reference parameters. ✓ (2)

4.6 To be able to create an object✓ and setting the initial values at the same time ✓ (2)

4.7 (a) a procedure that will change the values of private attributes (any set method) (1)
(b) a function that will make a private attribute available to the application program (any get method) (1)

4.8 object✓.free✓ (2)

4.9 while .. do✓ – you do not want to read anything from an empty file ✓ (2)

4.10 4.10.1 (a) boring/repetitive/difficult to distinguish between patient and medicine (1)
(b) tabs would not lead logically from top to bottom (1)

4.10.2 (a) an alphabetical letter ✓was entered instead of a number✓ (2)
(b) use a loop✓ to check that only numbers are entered✓/use a try…except loop or use VAL (any 1) (1)

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QUESTION 5

5.1 ADSL – need ISP (fixed monthly cost)
Fixed cost for rental of line
Do not pay for Internet connection but do pay for telephone calls (2)
Reach faster speeds
Wireless – need card for computer which acts as modem
Could use cell phone as modem
Do not pay for connection time but amount of data you upload or download
Need reception and a service provider e.g. iburst. (2)
Recommend ADSL for clinic work because the connection is more reliable when bad weather or other interference from machines in the hospital could affect communication (1)

5.2 Fax to email, print one proof document before printing a whole run, print only relevant web page info, print more than one page per A4✓ (any 2) (2)

5.3 5.3.1 Power on/printer plugged in/chosen correct printer in dialogue box/check paper size/check driver installed (any 3) (3)

5.3.2 Spooling – data is sent to the printer✓ and is placed in a queue✓ (2)

5.4 5.4.1 Check that the writer/publishing authority is authentic, cross referenced/is fact based/is research methodology described, check when the web page was last updated (any 2) (2)

5.4.2 Password protection/encryption✓ (1)

5.4.3 (a) embedded OS/windows mobile✓/ (1)
(b) Bluetooth/USB cable/Infrared (any 2) (2)

5.4.4 Set up a website/blog/send out emails/ (any 2) (2)

5.5 5.5.1 Virtual private network (1)

5.5.2 Doctors could access patient info wherever they are/emails through the clinic could be accessed anytime/reports for work could be done at home and mailed/(any reasonable answer) (1)

5.5.3 Firewall/updated antivirus/passwords that need to be changed (any 2) (2)

5.6 5.6.1 control panel, mouse (1)

5.6.2 multitasking – allow the user to listen to music in background while typing letter or download information while playing game – computers appears to be doing more than one task at a time (2)

Blog – record their experiences/update their medical progress, facebook/myspace – interact with their friends/family around the world, email communication, SKYPE phone calls, can SMS, Twitter (4)

5.6.3 (a) up to date information/online lessons/can work at own pace/online word processing (any 2) (2)

(b) pornography/open to abuse from unknown people/gambling online/Spend too much time – carpal tunnel syndrome, affect eyesight, undesirable websites, get involved in computer crime (any 2) (2)

5.7 Voice recognition software, small pointer on a helmut to be used as a mouse, large roller ball as a mouse (any 2) (2)

5.8 5.8.1 GPS – Global positioning system/satellite to determine where you are and plot the route to take between where you are and your destination✓
GPRS – general packet radio system often used to access the Internet from a cell phone✓ (2)

5.8.2 can determine what the terrain is like, e.g hills✓ (1)

5.9 Biometrics – only allow authorised access (parents/doctors) by using fingerprints/retinal scans – checked against a database (2)

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