**DEPARTMENT OF EDUCATION KZN**

**INFORMATION TECHNOLOGY**

**JUNE EXAMINATION 2013**

**SUGGESTED ANSWERS**

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| QUESTION 1   * 1. A 1.6. C   2. B 1.7. A   3. A 1.8. D   4. D 1.9. B   5. B 1.10. A   QUESTION 2  2.1. Dual Core consists of 2 complete execution cores in one physical processor.  Quad core consists of 4 complete execution cores in one physical processor.  2.2. (a) A specific group of instructions that a particular CPU can recognize and execute.    (b) RISC – reduced instruction set computing – refers to single instruction that specifies  single operation.  CISC – complex instruction set computing – refers to single instruction that specifies  Multiple operations.  (c) It is extra instructions designed to speed up the processing of graphics, audio, and video  functions.  (d) Northbridge – Manages the fastest and hardest working part of the motherboard  Connects the CPU to RAM and AGP/PCI express connection  Southbridge – Connects devices such as serial and parallel ports, PCI slots, USB,  FireWire and PS2(Keyboard and mouse) ports.  2.3.1. - It is bigger(4 Gb) (any 2)  - can store a larger OS more features  - close to CPU – makes processing time faster, no need to wait long for data/instructions  2.3.2. MRAM – Store data using magnetic fields  DRAM – Stores data using electrical charges.  2.3.3. A section of the HDD that is used by the O.S. as an extension of RAM. The user is fooled  into thinking that there is more RAM that there actually is.  2.3.4. Paging – A technique that divides the virtual address space into fixed length pages, each  of which can be moved into primary memory when space becomes available.  Thrashing – refers to excessive paging in virtual memory. Occurs when too many  processes compete for the scarce memory resources.  2.4.1. A high speed port used to connect video and audio devices.  2.4.2. Universal serial bus  2.4.3. PCI bus connects higher speed devices to the motherboard.  2.4.4. AGP improves speed at which graphics, 3D graphics and video transmit.  It also provides a faster, dedicated interface between Video card and CPU.    2.5.1. MS Office(Word and Excel) or any other found in the package offered.  2.5.2. - File I/O management  - Process management  - Memory management  - Device I/O management  2.5.3. Advantage – Often free - can add to code - available for multiple platforms  Disadvantage – Limited support – not always fully debugged and tested – may contain  errors.  2.6.1. - Sharing of expensive software  - Sharing of expensive hardware e.g. printer  - Saves time(learner to state how time is saved) e.g. don’t have to transfer 1 pc per time.  - limits viruses no need for flash drives etc.  2.6.2. - Need a technician to maintain network.  - Need powerful network oriented O.S.  - it is costly in terms of software and hardware  - If the server does not work, entire network fails  2.6.3. **Star RING**  2.6.4. **Advantage UTP** **Disadvantage Fibre**  - Cheaper - very expensive  - Easy to setup/install - more difficult to setup/install  - high speed over short distances - fragile breaks easily  2.6.5. - Connects several devices in a network  - Detects and isolates errors in a network so it doesn’t fail  - intelligent path selection, reduces traffic  - manages bandwidth  - regenerates and amplifies signal      2.6.6. a) Wireless fidelity  b) Wireless networking technology that uses radio waves to provide wireless high speed  internet and networking connections.  c) – suitable for mobile devices – very fast  - expensive  - Uncontrolled access  2.7.1. - Can be used in remote areas  - Cables not reliable – damage easily also can be stolen  - Easy to add other centres to network, no cables.  2.7.2. Reduces traffic  Finds the correct path and the most efficient (fastest) path to send data.  2.8. a) Fixing faulty computers  Installing new computers  Installing drivers and equipment    b) Network layout planning  User setup – control rights  Installing an setting up the network software  Backups  Access control - firewalls  2.9. a) Special storage location in RAM used to hold data being sent to printer.  b) Spooler is a program that places jobs in a queue in a spooling file (on the HDD) sends  these files to buffer when ready. | Marks  10  1  1  2  1  1  1  1  2  1  1  2  2  2  1  1  2  2  4  Any 1  Any 1  Any  2  Any  2  2 for each diagram  4  2 each  4  Any  2  1  2  2  3  2  2  2  2 |

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| QUESTION THREE  3.1. ADSL – Assymetric digital subscriber line.  - A permanent digital connection consisting of a single line that uses a splitter or a  DSL filter to allow data and voice to be transmitted through the same line  simultaneously.  100Gb cap – a limit of downloads of only 100Gb per month.  3.2.1. Yes. A modem is required for internet connection.  Or  No. You need a 3G card for your Laptop/Pc or any other 3G capable electronic device  e.g. cellphone.  3.2.2. Cellular Tech or Mobile Tech or Radio waves or wireless  3.3. a) Rules describing acceptable behavior when sending or receiving e-mails or any form of  electronic communication.  b) Unsolicited junk e-mail  3.4. IM, IRC, Forums, Blogs, Social networking e.g. Facebook, twitter etc.  3.5.1. – not much human contact  - can become addictive.  - lose track of time  - can communicate with dangerous strangers and not know a thing.  3.5.2. Share ideas, photos etc.  Cheap and fast way of communicating  3.6. – must be from a well-known and reliable source  - Compare information from different websites.  - must be from authors who are frequently cited by other authors in the field.  3.7.1. SSL – provides encryption for all data that passes between client and internet services.  Once the client has a digital certification, the web browser communicates securely  with client.  3.7.2. SSL is more processor intensive  Bandwidth is intensive  Has cost implications  Not always required  3.7.3. A mechanism where multiple Hard disks are combined but appear as one disk.  Redundant array of Inexpensive/independent disks.  3.7.4. No. Data is spanned across multiple disks but there is no Mirroring or parity.    QUESTION FOUR  4.1.The zero in front of the number will not be allowed  Not all text formats can be converted to number formats  The size of most number fields is not big enough for the full telephone number.  4.2. It is used to link the two tables or creates the relationship between the two tables.  4.3.1. StudentNo/StudentID. The primary key has a unique value for each record in the table  or uniquely identifies a record in a table.  4.3.2. A = 3 ; B = 5 ; C = 6  4.3.3. – less duplication of data e.g. repeating Trainer details.  - avoids anomalies e.g. if trainers’ details are changing, change only happens in one  place.   * Easier to query DB * Prevent delete anomaly * Prevent update anomaly   4.4.1. a) True  b) False  c) False  d) False  e) True  4.4.2. No. The first value rating of 3 gives an output of TRUE for incentive. Only rating of 7 and  over should get incentive.  4.4.3. Line 8 – If RATING >= 7 AND PART TIME = YES THEN  Line 9 – INCENTIVE 🡨 200  4.5.1. a) Integer  b) double  4.5.2. a) ArrayIndex out of bounds  b) An error that occurs while a program is executing or running. Program is terminated.  c) L5 – Loop until StartPos>9  d) Logical Error  e) L9 – AverageTrained 🡨 TotalTrained/8 or AverageTrained 🡨 TotalTrained/StartPos -2  4.6.1. Default constructor and Parameterized constructor.  4.6.2. a) getIdNo, getFees  b) setDate  c) setDate  e) getIdNo , getFees    4.6.3. These are access modfiers. Private means the variables are only accessible to objects of the  class they are defined. Public means they are accessible to objects defined outside the class.  4.6.4.a) Accessor methods allows the programmer to get values out of the object class.  b) Mutator methods changes the state of objects and sets the value of class  members/variables.  QUESTION FIVE  5.1.1. – Touch screens, more memory, Internet Access, IM’s, share photo and videos with built in  Cameras, allows to display maps, portable media player - listen to music, GPS capabilities,  Receives and send e-mails, PDA capabilities such as running applications.    5.1.2. Doing business over the internet.  5.1.3. can do business 24 hours a day  Less expensive, no need for premises or office equipment  World-wide client base  No need for stock  5.2.1. Spyware – use anti spyware software.  5.2.2. Phishing – ignore it or restart your web browser and go to original site.  5.3. DoS attack means to attack other computers from your account or computer. This might be to send out SPAM or bombard another computer with traffic from your computer or a fast network. | 2  2  2  2  1  Any 2  Any  2  any  1  2  2  Any  1  2  2  Any 1  2  2  2  3  Any  2  5  2  2  1  1  2  2  1  1  2  2  1  1  1  1  2  1  1  Choose  Any  2  1  Any  2  2  2  1 |