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**QUESTION 1 [MULTIPLE CHOICE] [10]**

* 1. When deciding to purchase a motherboard, what should not be considered?
  2. Form factor
  3. Processor socket and chipset
  4. Optical drive *[Unit 3, slide 3]*
  5. Other connectors, slots, and ports
  6. Motherboard size matters. Select the smallest motherboard size that you have learned.
  7. ITX *[Unit 3, slide 4]*

1. ATX
2. Mini-ATX
3. None of the above
   1. Precious bought a computer without an OS and she intends to install a new OS.  
      She may use \_\_\_\_\_\_\_\_\_\_\_\_ to set the boot sequence on her computer.
4. Optical drive
5. POST
6. BIOS [*Unit 3, slide 37]*
7. CMOS
   1. All Cooling systems remove excess heat from computer components because it maintains an optimum temperature thus working most effectively. Identify the component below:

A picture containing adapter

Description automatically generated

1. RAM cooler *[Unit 5, slide 12]*
2. Power supply cooler
3. Graphic card cooler
4. Processor cooler
   1. We all know that a system's computing power is determined by a processor. The well-known processor manufactures that are Intel and \_\_\_\_\_\_\_\_\_\_\_\_\_
5. ADM
6. Athlon
7. AMD *[Unit 4, slide 3]*
8. DMA
   1. In a PC, there are many features affecting processor performance and compatibility with motherboards. Select a component or feature that does not affect the performance of a processor.
9. SRAM
10. Processor speed
11. PSU *[Unit 4, slide 5]*
12. Graphics
    1. A processor consists of basic components, \_\_\_\_\_\_\_\_\_\_\_\_ are responsible for small holding areas on the processor chip, it holds counters, data, instructions, and addresses that the ALU is currently processing
13. Buses
14. Internal memory cache
15. Registers *[Unit 4, slide 7]*
16. Control unit
    1. All Cooling systems remove excess heat from computer components by maintaining an optimum temperature where it works most efficiently. Identify the component below

**![A picture containing engine

Description automatically generated]()**

1. RAM cooler
2. Power supply cooler
3. Graphic card cooler *[Unit 5, slide 11]*
4. Processor cooler
   1. A cooler is made of aluminum, copper, or combination of these metallic components. To ensure that the CPU does not overheat, we make use of \_\_\_\_\_\_\_\_\_\_\_\_\_ which is a creamlike mixture that eliminates air pockets by helping to draw heat off the processor
5. Ice pack compound
6. Thermal compound *[Unit 5, slide 8]*
7. Liquid cooling compound
8. Nitrogen compound
   1. Wayne has been using his PC for years and recently started experiencing problems with overheating. Select the best course of action.
9. Consider the power supply is inadequate
10. Check for missing/loose standoffs or loose screws
11. Suspect the power supply is faulty
12. Flash UEFI/BIOS to update firmware on motherboard *[Unit 5, slide 40]*

**QUESTION 2 [TRUE & FALSE] [10]**

**State whether the following statements are True or False**

**Write your answer on Page Table 123. Only in TABLE 123 will be marked/graded.**

* 1. A Motherboard is the most complicated computer component, it is one of the first items considered when building a computer.

1. True *[Unit 3, slide 3]* b) False*]*
   1. Speed of memory, Front Side Bus, processor, or other components is measured in hertz (Hz), which is one cycle per second which is equivalent to one billion cycles per second.
2. True b) False *[Unit 3, slide 24]*
   1. A Chipset is considered a set of chips on a motherboard that works with the processor to collectively control memory, motherboard buses, and some peripherals.  
      a) True *[Unit 3, Slide 15]* b) False
   2. A 32-bit processor is also known as x32 processors
3. True b) False *[Unit 4, slide 10]*
   1. Fanless CPU cooler (passive CPU cooler) enclosed by heat pipes, which contain liquid that becomes a vapor when heated.  
      a) True *[Unit 5, Slide 8]* b) False
   2. One of the best solutions to prevent overheating is to use a power supply that has vents on the left side for better ventilation
4. True b) False *[Unit 5, slide 42]*
   1. If a processor, expansion cards, and other components overheat, the system can get unstable, but the probability of having damaged components is impossible.

a) True b) False *[Unit 5, slide 4]*

* 1. Devices used to cool a system are case fans, processor coolers, liquid cooling systems, and ice packs.

a) True b) False *[Unit 5, slide 4]*

* 1. Memory holds data and instructions used by the CPU. New DIMMs run asynchronously with the system bus  
     a) True b) False *[Unit 4, slide 32]*
  2. Parity used by older SIMMs uses Error-checking and it is based on an extra (eighth) bit

a) True b) False *[Unit 4, slide 41]*

**QUESTION 3 [MATCHING] [10]**

**Match the terms to the descriptions. Write your answers on page 6 Table 123. Only in TABLE 123 will be marked/graded**

|  |  |  |  |
| --- | --- | --- | --- |
| 1. South bridge | 2. RAM | 3.North bridge | 4. Processor |
| 5.USB | 6. Video card | 7.Drives | 8. Front side bus |
| 9.cache | 10. Control unit | 11.Arithmetic logic unit | 12.RAM |
| 13.Memory bus | 14.ATA bus | 15.Sandy bridge | 16. Ivy Bridge |

Table

**3.1 Use Figure 2 and match it with Table 1 *[Unit 3 slide 16]***

**Diagram

Description automatically generated**

Figure

**3.1 Use Figure 3 and match it with Table 1*[Unit 4 slide 8]***

**Diagram

Description automatically generated**

Figure

**TABLE 123**

**PLEASE WRITE ANSWERS FOR QUESTIONS 1,2, and 3 in this table**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Only A; B; C or D** | |  | **Only True or False** | |  | **Only Numbers e.g. 12** | |
| **Question 1** | | **Question 2** | | **Question 3** | |
| **1** | **C √** | **1** | **True √** | **3.1 A** | **3√** |
| **2** | **A √** | **2** | **False √** | **3.1 B** | **7 √** |
| **3** | **C √** | **3** | **True√** | **3.1 C** | **4 √** |
| **4** | **A √** | **4** | **False** | **3.1 D** | **12√** |
| **5** | **C √** | **5** | **True√** | **3.1 E** | **6 √** |
| **6** | **C √** | **6** | **False** | **3.2 F** | **1 √** |
| **7** | **C √** | **7** | **False** | **3.2 G** | **8 √** |
| **8** | **C √** | **8** | **False** | **3.2 H** | **5 √** |
| **9** | **B √** | **9** | **False** | **3.2 I** | **11 √** |
| **10** | **D √** | **10** | **False** | **3.2 J** | **8 √** |

**Question 4 [Abbreviations] [10]**

**Write down the following the abbreviations:**

|  |  |  |
| --- | --- | --- |
| **Abbreviation** | | **Meaning** |
| 4.1 | FCLGA | Flip-chip Land grid array **√***[Unit 3, Slide 8]* |
| 4.2 | SPGA | Staggered pin grid array **√** *[Unit 3, Slide 9]* |
| 4.3 | QPI | QuickPath interconnect **√** *[Unit 3, Slide 17]* |
| 4.4 | GPU | Graphic Processing unit**√** *[Unit 3, Slide 21]* |
| 4.5 | DRAM | Dynamic Random-Access Memory **√** [*Unit 4, slide 29]* |
| 4.6 | ALU | Arithmetic logic unit **√** *[Unit 4, slide 6]* |
| 4.7 | DIMM | Dual inline memory module **√** *[Unit 4, slide 32]* |
| 4.8 | BSOD | Blue screen of death **√** *[Unit 5, slide 33]* |
| 4.9 | EMI | Electromagnetic interference**√** *[Unit 5, slide 28]* |
| 4.10 | CAG | Chassis air guide **√** *[Unit 5, slide 28]* |

**Question 5 [Long questions] [20]**

* 1. Sizwe is a football fanatic, he is always learning new skills on the internet. Sadly, his computer began misbehaving, and after researching he discovered that he needs to upgrade his motherboard’s firmware. Point out 2(two) types of firmware used in a motherboard **[2]**
* BIOS **√**
* UEFI **√** *[Unit 3, Slide 34]*
  1. Siphiwe bought a desktop computer 5 years ago and she refused to upgrade the software because her system becomes slow. Adding more RAM to your system may increase performance. Outline 3 other causes that may cause you to add more RAM to your system **[3]**
* Applications refuse to load**√**
* Unstable system**√**
* Windows “Insufficient memory” error message **√** *Unit 4, slide 43*
  1. Upgrading or Installing new modules on your motherboard is simple. One needs to be cautious when installing them. Outline at least 5(five) guidelines that you need to be aware of before installing a RAM **[5]**
* Always use an ESD strap**√**
* Turn off power, unplug power cord, press power button, remove case cover**√**
* Handle memory modules with care**√**
* Do not touch edge connectors on memory module or memory slot**√**
* Do not stack cards or modules**√**
* Look for notches on one side or in the middle for correct orientation**√**

*Unit 4, slide 51*

*Choose any 4*

* 1. Thulani is a student and he decided to purchase a desktop that would last until he graduates. He has been using his desktop computer for many years, and one of these days his PC turned off. His friends advise him to replace the computer’s PSU.

5.4.1 Point out 2 (two) possible reasons why he should replace his PSU? **[2 ]**

* + Power supply in existing system fails**√**
  + The power supply in existing system is not adequate *[Unit 5, slide 28]* **√**

5.4.2Derive at least 4 (four) features that need to be considered before purchasing a PSU? **[4]**

* Form factor determines power supply size**√**
* Wattage ratings (listed in documentation) **√**
* Number and type of connectors**√**
* Fans inside the PSU**√**
* Dual voltage options**√**
* Warranty and overall quality *[Unit 5, slide 15]* **√**

*Choose any 4*

* 1. Troubleshooting a hardware problem such as a PSU can be a nightmare so like any other peripheral inside a computer. A list of resources to mitigate such problems was created. Outline 4 (four) resources that you can use to help you find a solution to your hardware problem **[4]**
* The web (Internet) **√**
* Chat forums or email technical support**√**
* Manufacturer’s diagnostic software**√**
* User manuals**√**
* Technical associates in your organization [*Unit 5, slide 18]* **√**

*Choose any 4*

**\*\*\*END\*\*\***

**Total Marks (60)**