Tshwane University of Technology

We empower people

| | |
|---|---|
| Student Number | |
| Surname & Initials | |
| Lecturer | |
| Group | |

**YEAR: MAY/ JUNE 2022**

**FORMATIVE ASSESSMENT 2A**

| | |
|---|---|
| **SUBJECT NAME:** | COMPUTER FUNDAMENTALS |
| **SUBJECT CODE:** | CFAF05D |
| **QUALIFICATION(S):** | |

**PAPER DESCRIPTION:** Theory **DURATION:** 2 HOURS **PAPER:** ONLY

**SPECIAL REQUIREMENTS**

- ■ **NONE**
- ☐ **NON-PROGRAMMABLE POCKET CALCULATOR**
- ☐ **SCIENTIFIC CALCULATOR**
- ☐ **COMPUTER ANSWER SHEET**
- ☐ **GRAPH PAPER**
- ☐ **DRAWING INSTRUMENTS**

**OTHER:**

**INSTRUCTIONS TO CANDIDATES:**

ANSWER ALL QUESTIONS ON THE QUESTION PAPER

**TOTAL NUMBER OF PAGES INCLUDING COVER PAGE:** 10 (including cover page)

**TOTAL NUMBER OF ANNEXURES:** 0

**EXAMINER 1:** Mr YIR Ayub

**MODERATOR**

**FULL MARKS:** 60

**TOTAL MARKS:** 60

**STUDENT TOTAL:** ___

**STUDENT %:** ___

## QUESTION 1 [MULTIPLE CHOICE] [10]

1.1 When deciding to purchase a motherboard, what should not be considered?

a) Form factor
b) Processor socket and chipset
c) Optical drive
d) Other connectors, slots, and ports

1.2 Motherboard size matters. Select the smallest motherboard size that you have learned.

a) ITX
b) ATX
c) Mini-ATX
d) None of the above

1.3 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.

a) Optical drive
b) POST
c) BIOS
d) CMOS

1.4 All Cooling systems remove excess heat from computer components because it maintains an optimum temperature thus working most effectively. Identify the component below:

a) RAM cooler
b) Power supply cooler
c) Graphic card cooler
d) Processor cooler

1.5 We all know that a system's computing power is determined by a processor. The well-known processor manufactures that are Intel and _____

a) ADM
b) Athlon
c) AMD
d) DMA

1.6 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.

a) SRAM
b) Processor speed
c) PSU
d) Graphics

1.7 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

a) Buses
b) Internal memory cache
c) Registers
d) Control unit

1.8 All Cooling systems remove excess heat from computer components by maintaining an optimum temperature where it works most efficiently. Identify the component below

a) RAM cooler
b) Power supply cooler
c) Graphic card cooler
d) Processor cooler

1.9 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

a) Ice pack compound
b) Thermal compound
c) Liquid cooling compound
d) Nitrogen compound

1.10 Wayne has been using his PC for years and recently started experiencing problems with overheating. Select the best course of action.

a) Consider the power supply is inadequate
b) Check for missing/loose standoffs or loose screws
c) Suspect the power supply is faulty
d) Flash UEFI/BIOS to update firmware on motherboard

## 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.**

2.1 A Motherboard is the most complicated computer component, it is one of the first items considered when building a computer.
a) True b) False

2.2 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.
a) True b) False

2.3 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 b) False

2.4 A 32-bit processor is also known as x32 processors
a) True b) False

2.5 Fanless CPU cooler (passive CPU cooler) enclosed by heat pipes, which contain liquid that becomes a vapor when heated.
a) True b) False

2.6 One of the best solutions to prevent overheating is to use a power supply that has vents on the left side for better ventilation
a) True b) False

2.7 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

2.8 Devices used to cool a system are case fans, processor coolers, liquid cooling systems, and ice packs.
a) True b) False

2.9 Memory holds data and instructions used by the CPU. New DIMMs run asynchronously with the system bus
a) True b) False

2.10 Parity used by older SIMMs uses Error-checking and it is based on an extra (eighth) bit
a) True b) False

## 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 1

**3.1 Use Figure 2 and match it with Table 1**

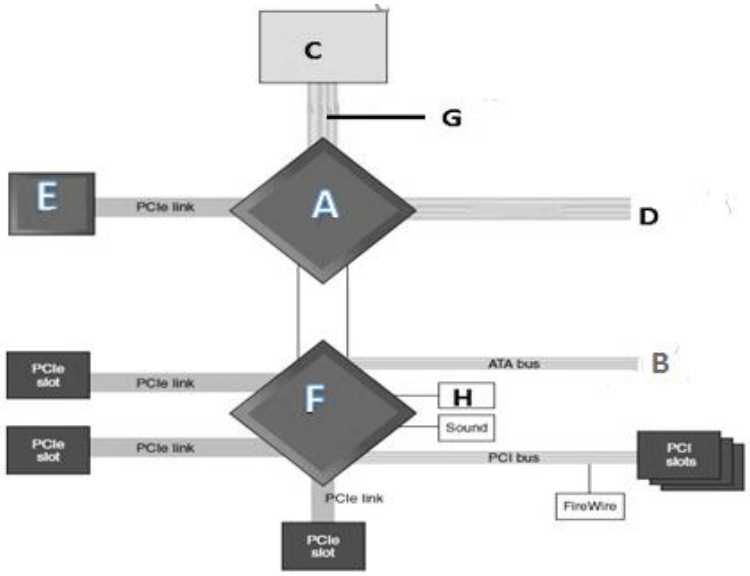


*Figure 1*

**3.1 Use Figure 3 and match it with Table 1**

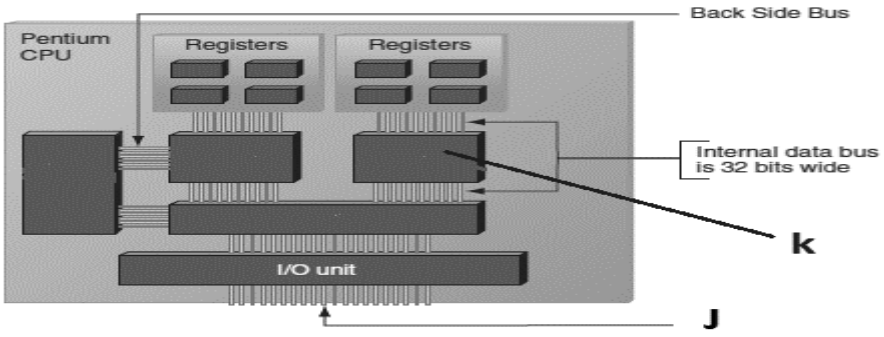


*Figure 2*

# 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** | | | **1** | | | **3.1 A** | |
| **2** | | | **2** | | | **3.1 B** | |
| **3** | | | **3** | | | **3.1 C** | |
| **4** | | | **4** | | | **3.1 D** | |
| **5** | | | **5** | | | **3.1 E** | |
| **6** | | | **6** | | | **3.2 F** | |
| **7** | | | **7** | | | **3.2 G** | |
| **8** | | | **8** | | | **3.2 H** | |
| **9** | | | **9** | | | **3.2 I** | |
| **10** | | | **10** | | | **3.2 J** | |

# Question 4 [Abbreviations] [10]

**Write down the following the abbreviations in full:**

| Abbreviation | | Meaning |
|---|---|---|
| 4.1 | FCLGA | |
| 4.2 | SPGA | |
| 4.3 | QPI | |
| 4.4 | GPU | |
| 4.5 | DRAM | |
| 4.6 | ALU | |
| 4.7 | DIMM | |
| 4.8 | BSOD | |
| 4.9 | EMI | |
| 4.10 | CAG | |

## Question 5 [Long questions] [20]

5.1 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]

_____
_____
_____
_____

5.2 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]

_____
_____
_____
_____
_____

5.3 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]

_____
_____
_____
_____

5.4 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]

_____
_____
_____

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

_____
_____
_____
_____

5.5 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]

_____
_____
_____
_____
_____
_____
_____
_____

*****END*****

**Total** **[60]**