GES IG1 Computer Science Half Termly 2 January – March 2020

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| TOPIC: Theory Processor Fundamentals |

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| Theme: Von Neumann Architeture and Special Registers | Level: Year 10 |
| Objectives: *To understand the Role of Special Registers in Processors* | |

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| Focussing Questions | Key Words | |
| **Theory: Theory Fundamentals**   1. Special Registers and Memory.    1. What is the Von Neumann Architecture?    2. Why is there a need for Special Registers in Processors.?    3. Explain the effects of the stages of the cycle on specific register? 2. Buses, Programming Structures.    1. Why does a computer use different busses.?   b Show how data are transferred between various components of the computer system using the address bus, data bus and control bus.  3. Internet principles of operation   1. Show how the 3 layers of webpages interact on the Internet. 2. What are the different ways Errors can be detected in Data Transmission, 3. Explain how errors are corrected with data transfer.?   **Practical – Repetion and Algorithms**   1. Repetition:    1. Explain and use pseudocode, using the following loop structures:    2. FOR … TO … NEXT    3. REPEAT … UNTIL    4. Explain the use of Counting Variables 2. Algorithms    1. Explain the use of Flowcharts and its short-comings.    2. Why would Pseudocodes be a better option to use as an Algorithm.    3. Explain the rules when using Structured English as an Algorithm   **Repl.it – An one Line programming Console will be used with Chromebooks** | PC / SQR  Program Counter / Sequence Control Register  MAR  Memory Address Register  MDR / MBR  Memory Data Register / Memory  Address Bus, Data Bus, Control Bus  Assembler, Mnemonic Symbols  Iteration:  For loop, For each loop, While loop, Repeat until loop  Structured English  Verbs  Flowcharts  Pseudocodes  TraceTables | Explaining words  ...so...  ..because...  Therefore...  As a result...  This means that...  Therefore...  This caused...  ...Due to the fact...  ...caused…  However |

**Text Book: Departmental textbooks and Worksheets.**