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| **Computer Systems** | |
| 1 | State and explain FOUR (4) types of changes that may occur during the software maintenance process. |
| 2 | List anddescribe TWO (2) major issues that could harm *computers* |
| 3 | Draw a diagram of the Von Neumann computer architecture. Clearly show and label each major component of your diagram. |
| 4 | Explain THREE (3) differences between software update and software upgrade |
| 5 | Explain TWO (2) differences between WAN andLAN. Give ONE (1) example for each of them. |
| 6 | Identify TWO (2) steps in the software maintenance process. |
| 7 | Explain the main difference between Synchronous Communication andAsynchronous Communication. Give ONE (1) example for each of them. |
| 8 | Identify TWO (2*)* types of Computing Environment |
| 9 | Explain each of the following file-related concepts.  • File System  • File Types  • File Permissions  • File Meta-Data  • File Backup |
| 10 | List FOUR (4) common reasons why the requirements elicitation stage may have problems |
| 11 | Explain each of the tests listed below andstate when the test is conducted.  • Power On Self-Test (POST)  • Compliance Testing  • Regressing Testing  • Acceptance Testing  • Service Testing |
| 12 | Explain the term Preventative Maintenance |
| 13 | THREE (3) types of Preventative Maintenance. |
| 14 | Explain andgive ONE (1) example of computer items that satisfy the following descriptions.  • Volatile storage  • Non-volatile storage  • Input device  • Output device  • ‘On-chip’ component |
| 15 | **Programming Language**  Machine Code  Assembly Language  High Level Language  **For example**  Java, C++ and COBOL are example languages  Made up from binary instructions comprising sequences of 0s and 1s  Is not human-readable but can be directly executed by the CPU  Uses three-letter abbreviations such as MOV  Must be compiled or interpreted ahead of execution |

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| Decide whether the following statements are true or false:   1. Software and operating system choice should direct hardware selection 2. A computer cannot work without a peripheral, nor a peripheral without a computer 3. A common example of a peripheral is the computer’s motherboard 4. The scanner and printer are both examples of output peripheral devices 5. Bluetooth is an input/output communications peripheral device 6. Peripherals may interface with the host computer via wires or wirelessly 7. Peripherals can include pen drives, external hard drives and tape drives 8. The first major stage of the software development process is design 9. Data collection is only an issue for projects involving database systems 10. A high quality software development process prioritizes programming skills 11. A peripheral is an ‘on-processor’ component of a typical computer 12. A computer cannot work without a peripheral, nor a peripheral without a computer 13. A common example of a peripheral is the computer’s motherboard 14. Peripherals can provide additional storage functions to the hard drive 15. The keyboard and mouse are both examples of input peripheral devices 16. The scanner and printer are both examples of output peripheral devices 17. Bluetooth is an input/output communications peripheral device 18. Peripherals only provide the computer with data input/output facilities 19. SDLC stands for Software Development Lateness Check 20. A high-quality software development process prioritizes programming skills 21. Requirements analysis is concerned with establishing client needs 22. When building a brand-new system, the old one can safely be ignored 23. Suitable documentation is only really important once the final system is installed 24. ‘Functional’ and ‘Non-Functional’ are descriptions of database designs 25. Stakeholders may be grouped into three distinct categories |

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| Briefly describe the purpose of the hardware components listed below:   1. Program Counter 2. Memory Buffer Register 3. ALU 4. RAM 5. Instruction Register 6. Cache memory 7. Memory Address Register 8. ROM 9. Accumulator 10. CPU   Name each hardware component described below:   1. Performs logical and mathematical operations 2. Holds the instruction which is to be executed 3. Holds memory address locations of data and/or instructions to be read/written to main memory 4. Holds the data and instructions traveling to/from the main memory 5. Non-volatile, on-chip memory 6. A temporary working area for the ALU 7. A fast unit of memory between registers and main memory 8. Often referred to as the ‘brain’ of the computer or processor 9. Holds the memory location of the next instruction to be processed 10. Often called main memory or primary storage – it is editable |