**DV162\_42\_PAS\_On CPU Features**

**Possible Answers Sheet**

Q1. What is the main difference between 32-bit and 64-bit architectures?

Ans: The main difference between these architectures is the amount of data they can address. 32-bit can address 2^32 = 4 GB memory while 64-bit can address 2^64 = 17.59 EB (Exabytes) =~17 billion GB memory which is a very very large number.

Q2. A 32-bit processor can access\_\_\_\_\_\_\_\_\_\_ gigabytes of information, whereas a 64-bit processor can access\_\_\_\_\_\_\_\_\_\_\_\_\_billion gigabytes of information.

Ans. 4, 17

Q3. How can you find the system type of your Windows system?

Ans: Go to the Control Panel under the System settings, and it will tell you the system type.

Q4. What type of hardware drivers do you need if you are using a 32-bit operating system?

Ans: 32-bit Hardware drivers.

Q5. What is x86 software?

Ans: 32-bit Softwares are called x86 software. This is also referenced back to the Intel 8080 processors line.

Q6. How can you tell if applications have been written for a 64-bit operating system or a 32-bit operating system?

Ans: We have to look where they have been installed, in a 64-bit system, if 32-bit applications installed under Program Files x86 and 64-bit applications install under Program File. 32-bit Systems do not allow the installation of 64-bit applications.

Q7. If you're running a 64-bit operating system, you can only run 64-bit applications, but you cannot run 32-bit applications. (True/False?

Ans. False.

Q8. What is the Advanced Risk Machine?

Ans: Advanced RISC Machine (ARM) is another family of CPUs based on RISC(Reduced Instruction Set Computer) architecture.

Q9. What are the benefits of the ARM architecture?

Ans: ARM is extremely efficient and fast in its processing, it uses less power, creates less heat. It's a perfect choice for Mobile Devices and IoT devices.

Q10. What types of devices use ARM?

Ans: Mobile Devices and Internet of Things.

Q11. We often refer to a CPU, or a Central Processing Unit, as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Ans . Single, monolithic device.

Q12. The main processing of a CPU occurs on the \_\_\_\_\_\_\_\_\_\_\_\_\_.

Ans. Processor core.

Q13. How many cores are in modern CPUs?

Ans: Multiple Cores are in modern CPUs. e.g Dual Core, Quad Core and Multi-Core.

Q14. What is not unusual for multiple cores in a CPU?

Ans: To have multiple caches.

Q15. If you start monitoring the amount of processing occurring on your CPU,you might see such as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Ans. Window Task Manager.

Q16. What does HTT stand for?

Ans. Hyper-Threading Technology.

Q17. What is Hyper-Threading Technology?

Ans: It's a technology by Intel that allows a single CPU core to act like multiple cores(Logical cores).

Q18. What is the impact of hyper-threading?

Ans: Improves efficiency by letting the processor handle more tasks at once, especially when dealing with multitasking or background processes. Increases the throughput of the CPU by 15% to 30%.

Q19. Does a modern operating system support hyper-threading?

Ans: Yes.

Q20. What kind of hardware is needed to virtualize additional operating systems?

Ans: Many CPUs are needed to virtualize additional operating systems.

Q21. How can I check if my processor supports Intel Virtualization Technology (VT) or AMD Virtualization (AMD-V)?

Ans: From the BIOS we can check.