COMPUTER ORGANIZATION & ARCHITECTURE-UCT302

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QUESTION1: Write a quotation for a laptop.

Answer1:

General Information

Laptop Type: Standard Laptop
Brand: HP

Laptop Display

Screen Resolution: 1920 x 1080 - FHD
Display Type: Full HD
Cache Memory: 8 MB
Screen Size (Diagonal): 39.6 cm (15.6 inch)

Laptop Hardware

Graphics Card – Brand Nvidia
Hard Drive: 512 GB
Memory (RAM): 16 GB
Graphics Card - Sub-Brand: GeForce
Processor: 4.20 GHz (Turbo Frequency) Quad Core Intel Core i5-1135G7 11th Gen P
Storage Type: SSD
Expandable Memory: 16 GB
Memory Details: 16 GB (2 x 8 GB)
Backlit Keyboard: Yes

Processor Related

Processor Brand: Intel
Processor Core: Quad-core
Processor Speed: Turbo Frequency: 4.2 GHz
Processor Model Number: 1135G7
Speaker Type: Dual Speakers
Core Type: Core i5
OS: Windows10

Question 2: Differentiate between Ryzen and Intel processor.

Answer2:

RYZEN PROCESSOR (AMD)	INTEL PROCESSOR
Ryzen is an e.g of AMD which stands for Advanced Micro Devices. It was invented by Jerry Sanders, Jack Gifford, John Carey.	Intel stands for "**Int**egrated **El**ectronics". It was invented by Robert Noyce.
Less efficient than Intel.	More efficient.
they often run cooler and longer on battery, due to smaller lithography (TSMC 7nm is similar to Intel 10 nm)	Can heat up when used with Clock Speed Boost (14 nm)
It has symmetric multiprocessing capabilities of up to 8 sockets/128 cores.	It has symmetric multiprocessing capabilities of up to 4 sockets/28 cores.
Less expensive than Intel at a higher range.	Less expensive than AMD Processor at the lower range.
Clock speed reaches and surpassed 5.0 GHz	The clock speed can reach 5.0 GHz but results in more heat
Example – AMD Ryzen, AMD Thread-ripper, AMD FX-Series, AMD EPYC, AMD Opteron, AMD Athlon 64	Example – Intel Xeon, Intel Core i series, Intel Core m series

Question 3: Differentiate between basic computer and latest computer.

Answer3:

Basic computer	Modern computer
It has 9 registers. (PC, AR, DR, AC, IR, TR, OUTR, INPR, SC)	Most modern CPU's have between 16 and 64 General Purpose Registers
There was no such provision of multi core processors until late 2000’s.	It has multi core processors, for the division of tasks and efficient performance.
The earlier version of computer used Magnetic core memory.	Modern computers use the semiconductor memory.
Older computers had IPC counts as low as 0.1	modern processors IPC easily reach near 1.
Basic Computers or Old Computers used von Neumann architecture	Modern Computers use a mixture of Modified Harvard and Von Neumann Architecture, effectively gaining various performance and security benefits.

Question 4: Differentiate between HDD and SDD.

Answer 4:

SSD	HDD
SSDs stands for Solid state drive. In an SSD, all data is stored in integrated circuits.	An HDD is a data storage device that lives inside the computer. It has spinning disks inside where data is stored magnetically.
It uses less power and result in longer battery life because data access is much faster and the device is idle more often.	With their spinning disks, HDDs require more power when they start up than SSDs.
These are more reliable than HDDs, which again is a function of having no moving parts.	With an HDD, performance slows significantly.
SSD are more expensive comparatively.	They are lower in cost and are practical for data that does not need to be accessed frequently,
SSD does not produce noise.	HDD can produce noise due to mechanical movements.
In SSD the data transfer is random access.	In HDD the data transfer is sequential.