1. How does the incorporation of Flynn's Taxonomy in the design of High-Performance Computing (HPC) Clusters impact the scalability and efficiency of parallel processing in distributed systems? Provide a detailed analysis of how key properties of HPC architectures such as vectorization, pipelining, and the Master-Slave architecture contribute to achieving high performance in distributed computing environments.

2. How can the concept of parallelism be effectively utilized within computer clusters to achieve high performance computing, and what are the key challenges that need to be addressed when designing and optimizing parallel algorithms for such HPC clusters?

3. How does the architecture of a distributed computing system, which includes multiple high-speed computer servers networked with a centralized scheduler, contribute to enhancing parallel computing workloads efficiency and scalability compared to traditional centralized computing systems?

4. How would the selection of either high-performance multi-core CPUs or GPUs impact the overall performance and scalability of a distributed computing system when handling rigorous mathematical calculations, machine learning models, and graphics-intensive tasks?

5. How would the architectural design of a large-scale HPC cluster with 100,000 nodes need to account for factors such as efficient communication, load balancing, fault tolerance, and scalability to ensure optimal performance in distributed computing tasks and operations?

6. How does the underlying design and architecture of Linux contribute to its effectiveness in managing and optimizing performance within HPC clusters, and what specific distributed computing concepts are essential for ensuring efficient operation and scalability in such high-performance computing environments?

7. How do distributed computing principles and core concepts manifest differently in operating systems such as Windows, Ubuntu, and Unix, and what implications do these differences have on the design and performance of distributed systems running on each of these operating systems?