Parallel Computing

Practice Exam

Difficulty: easy

Parallel Computing Practice Exam - Easy Difficulty

****Section 1: Multiple Choice (1 point each)****

****Instructions:** Circle the best answer for each question.**

1. Which of the following is NOT a primary advantage of parallel computing?

a) Increased speed for computationally intensive tasks.
b) Reduced energy consumption per task.
c) Simplified programming and debugging.
d) Ability to handle larger datasets.

****Answer:** (Circle one) a) b) c) d)**

****Section 2: Short Answer (5 points)****

****Instructions:** Answer the following question concisely and to the point.**

2. Briefly explain the difference between a shared-memory and a distributed-memory parallel computing architecture. Give one example of a programming model suitable for each.

****Answer:****

****Answer Key:****

1. c) Simplified programming and debugging (Parallel programming is generally more complex than sequential programming).

2. Shared-memory architectures have multiple processors sharing the same address space, allowing easy data exchange. Distributed-memory architectures have processors with their own private memory, requiring explicit communication (message passing). Examples: Shared-memory - OpenMP; Distributed-memory - MPI. (Other valid examples of programming models exist.)