**Blue Waters Petascale Semester Curriculum v1.0**

**Unit 5: MPI**

**Lesson 5: Performance Evaluation of MPI Programs**

**Sample Assessment**

*Developed by Mobeen Ludin for the Shodor Education Foundation, Inc.*



*Except where otherwise noted, this work by The Shodor Education Foundation, Inc. is licensed under CC BY-NC 4.0. To view a copy of this license, visit*[*https://creativecommons.org/licenses/by-nc/4.0*](https://creativecommons.org/licenses/by-nc/4.0)

*Browse and search the full curriculum at*[*http://shodor.org/petascale/materials/semester-curriculum*](http://shodor.org/petascale/materials/semester-curriculum)

*We welcome your improvements! You can submit your proposed changes to this material and the rest of the curriculum in our GitHub repository at*[*https://github.com/shodor-education/petascale-semester-curriculum*](https://github.com/shodor-education/petascale-semester-curriculum)

*We want to hear from you! Please let us know your experiences using this material by sending email to* [*petascale@shodor.org*](mailto:petascale@shodor.org)

1. What is the difference between CPU time and Wall clock time, and when would you use one over the other for measuring application’s performance?
2. When measuring performance of a multi-process application, how would you measure overall performance, or which process performance matters more than other for overall performance of the application.
3. Provide examples of real life scientific applications that could be used for strong scaling vs weak scaling.
4. How does blocking vs. non-blocking modes of MPI affect the performance of applications?