**What is the name of the MPI routine that combines a gather operation with an arithmetic or logical operation called?**

Select one:
- a. MPI_Gather_Op()
- b. MPI_Reduce()
- c. MPI_Scatter()
- d. MPI_Gather()
- e. MPI_Combine()

**What does the MPI routine MPI_Barrier() do?**

Select one:
- a. Will cause processes after calling MPI_Barrier() to wait for all processes within the specific communicator to call the routine. Then all processes are released and are allowed to continue.
- b. Will cause processes to wait for all processes within the specific communicators to call the routine. Then all processes send a message to the master process and continue.
- c. Waits for all messages to be sent and received.
- d. Makes a process execute slower to allow debugging.
- e. Waits for a specified amount of time.

**Why should a barrier be implemented as reentrant code?**

Select one:
- a. Because a process might leave a barrier before other processes leave the barrier.
- b. None of the other answers.
- c. Because the process might enter a barrier for a second time again before other processes have left their barrier routines for the first time.
- d. To measure the time of executing a barrier.

**What is the difference between an MPI blocking send routine and an MPI non-blocking send routine?**

Select one:
- a. The non-blocking routine returns immediately whereas the blocking routine returns after the local actions have been completed.
- b. Nothing.
- c. The non-blocking routine returns immediately whereas the blocking routine returns after the message has been received at the destination.
- d. The non-blocking routine does not stop the programmer using variables associated with the message transfer whereas the blocking routine will stop the programmer doing so.
- e. The blocking routine will synchronize processes.