High Performance Computing (HPC) MCQs [set-16]

376. The___ time collectively spent by all the processing elements Tall = p TP?

A. total

B. average

C. mean

D. sum

Answer: A

377. The dual of one-to-all broadcast is ?

A. all-to-one reduction

B. all-to-one receiver

C. all-to-one sum

D. none of above

Answer: A

378. A hypercube has?

A. 2d nodes

B. 2d nodes

C. 2n nodes

D. n nodes

Answer: A

379. The Prefix Sum Operation can be implemented using the ?

A. all-to-all broadcast kernel.

B. all-to-one broadcast kernel.

C. one-to-all broadcast kernel

D. scatter kernel

Answer: A

380. In the scatter operation ?

A. single node send a unique message of size m to every other node

B. single node send a same message of size m to every other node

C. single node send a unique message of size m to next node

D. none of above

Answer: A

381. The gather operation is exactly the inverse of the ?

A. scatter operation

B. broadcast operation

C. prefix sum

D. reduction operation

Answer: A

382. Parallel algorithms often require a single process to send identical data to all other processes or to a subset of them. This operation is known as _____?

A. one-to-all broadcast

B. all to one broadcast

C. one-to-all reduction

D. all to one reduction

Answer: A

383. In which of the following operation, a single node sends a unique message of size m to every other node?

A. gather

B. scatter

C. one to all personalized communication

D. both a and c

Answer: D

384. Gather operation is also known as _____?

A. one to all personalized communication

B. one to all broadcast

C. all to one reduction

D. all to all broadcast

Answer: A

385. Conventional architectures coarsely comprise of a?

A. a processor

B. memory system

C. data path.

D. all of above

Answer: D

386. Data intensive applications utilize?

A. high aggregate throughput

B. high aggregate network bandwidth

C. high processing and memory system performance.

D. none of above

Answer: A

387. A pipeline is like?

A. overlaps various stages of instruction execution to achieve performance.

B. house pipeline

C. both a and b

D. a gas line

Answer: A

388. Scheduling of instructions is determined?

A. true data dependency

B. resource dependency

C. branch dependency

D. all of above

Answer: D

389. VLIW processors rely on?

A. compile time analysis

B. initial time analysis

C. final time analysis

D. mid time analysis

Answer: A

390. Memory system performance is largely captured by?

A. latency

B. bandwidth

C. both a and b

D. none of above

Answer: C

391. The fraction of data references satisfied by the cache is called?

A. cache hit ratio

B. cache fit ratio

C. cache best ratio

D. none of above

Answer: A

392. A single control unit that dispatches the same Instruction to various processors is?

A. simd

B. spmd

C. mimd

D. none of above

Answer: A

393. The primary forms of data exchange between parallel tasks are?

A. accessing a shared data space

B. exchanging messages.

C. both a and b

D. none of above

Answer: C

394. The First step in developing a parallel algorithm is?

A. to decompose the problem into tasks that can be executed concurrently

B. execute directly

C. execute indirectly

D. none of above

Answer: A

395. The Owner Computes Rule generally states that the process assigned a particular data item are responsible for?

A. all computation associated with it

B. only one computation

C. only two computation

D. only occasionally computation

Answer: A

396. A simple application of exploratory decomposition is?

A. the solution to a 15 puzzle

B. the solution to 20 puzzle

C. the solution to any puzzle

D. none of above

Answer: A

397. Speculative Decomposition consist of ?

A. conservative approaches

B. optimistic approaches

C. both a and b

D. only b

Answer: C

398. Task characteristics include?

A. task generation.

B. task sizes.

C. size of data associated with tasks.

D. all of above.

Answer: D

399. The dual of one-to-all broadcast is?

A. all-to-one reduction

B. all-to-one receiver

C. all-to-one sum

D. none of above

Answer: A

400. A hypercube has?

A. 2d nodes

B. 3d nodes

C. 2n nodes

D. n nodes

Answer: A