

High Performance Computing (HPC) MCQs [set-6]

126. In the second phase of 2D Mesh All to All, the message size is ____

- A. m
- B. $p \cdot \sqrt{m}$
- C. p
- D. $m \cdot \sqrt{p}$

Answer: D

127. In All to All on Hypercube, The size of the message to be transmitted at the next step is ____ by concatenating the received message with their current data

- A. doubled
- B. tripled
- C. halved
- D. no change

Answer: A

128. The all-to-all broadcast on Hypercube needs ____ steps

- A. p
- B. $\sqrt{p} - 1$
- C. $\log p$
- D. none

Answer: C

129. One-to-All Personalized Communication operation is commonly called ____

- A. gather operation
- B. concatenation
- C. scatter operation
- D. none

Answer: C

130. The dual of the scatter operation is the

- A. concatenation

- B. gather operation
- C. both
- D. none

Answer: C

131. In Scatter Operation on Hypercube, on each step, the size of the messages communicated is _____

- A. tripled
- B. halved
- C. doubled
- D. no change

Answer: B

132. Which is also called "Total Exchange" ?

- A. all-to-all broadcast
- B. all-to-all personalized communication
- C. all-to-one reduction
- D. none

Answer: B

133. All-to-all personalized communication can be used in _____

- A. fourier transform
- B. matrix transpose
- C. sample sort
- D. all of the above

Answer: D

134. In collective communication operations, collective means

- A. involve group of processors
- B. involve group of algorithms
- C. involve group of variables
- D. none of these

Answer: A

135. efficiency of data parallel algorithm depends on the

- A. efficient implementation of the algorithm
- B. efficient implementation of the operation

C. both

D. none

Answer: B

136. All processes participate in a single _____ interaction operation.

A. global

B. local

C. wide

D. variable

Answer: A

137. subsets of processes in _____ interaction.

A. global

B. local

C. wide

D. variable

Answer: B

138. Goal of good algorithm is to implement commonly used _____ pattern.

A. communication

B. interaction

C. parallel

D. regular

Answer: A

139. Reduction can be used to find the sum, product, maximum, minimum of _____ of numbers.

A. tuple

B. list

C. sets

D. all of above

Answer: C

140. source _____ is bottleneck.

A. process

B. algorithm

C. list

D. tuple

Answer: A

141. only connections between single pairs of nodes are used at a time is

- A. good utilization
- B. poor utilization
- C. massive utilization
- D. medium utilization

Answer: B

142. all processes that have the data can send it again is

- A. recursive doubling
- B. naive approach
- C. reduction
- D. all

Answer: A

143. The _____ do not snoop the messages going through them.

- A. nodes
- B. variables
- C. tuple
- D. list

Answer: A

144. accumulate results and send with the same pattern is...

- A. broadcast
- B. naive approach
- C. recursive doubling
- D. reduction symmetric

Answer: D

145. every node on the linear array has the data and broadcast on the columns with the linear array algorithm in _____

- A. parallel
- B. vertical
- C. horizontal
- D. all

Answer: A

146. using different links every time and forwarding in parallel again is

- A. better for congestion
- B. better for reduction
- C. better for communication
- D. better for algorithm

Answer: A

147. In a balanced binary tree processing nodes is equal to

- A. leaves
- B. number of elements
- C. branch
- D. none

Answer: A

148. In one -to- all broadcast there is

- A. divide and conquer type algorithm
- B. sorting type algorithm
- C. searching type algorithm
- D. simple algorithm

Answer: A

149. For sake of simplicity, the number of nodes is a power of

- A. 1
- B. 2
- C. 3
- D. 4

Answer: B

150. Nodes with zero in i least significant bits participate in _____

- A. algorithm
- B. broadcast
- C. communication
- D. searching

Answer: C
