High Performance Computing (HPC) MCQs [set-5]

101. In a broadcast and reduction on a balanced binary tree reduction is done in _____

A. recursive order

B. straight order

C. vertical order

D. parallel order

Answer: A

102. if "X" is the message to broadcast it initially resides at the source node

A. 1

B. 2

C. 8

D. 0

Answer: D

103. logical operators used in algorithm are

A. xor

B. and

C. both

D. none

Answer: C

104. Generalization of broadcast in Which each processor is

A. source as well as destination

B. only source

C. only destination

D. none

Answer: A

105. The algorithm terminates in _____ steps

A. p

B. p+1

C. p+2

D. p-1

Answer: D

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106. Each node first sends to one of its neighbours the data it need to....

A. broadcast

B. identify

C. verify

D. none

Answer: A

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107. The second communication phase is a columnwise _____ broadcast of consolidated

A. all-to-all

B. one -to-all

C. all-to-one

D. point-to-point

Answer: A

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108. All nodes collects _____ message corresponding to ?p nodes to their respectively

A. ?p

B. p

C. p+1

D. p-1

Answer: A

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109. It is not possible to port ____ for higher dimensional network

A. algorithm

B. hypercube

C. both

D. none

Answer: A

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110. If we port algorithm to higher dimemsional network it would cause

A. error

B. contention

C. recursion

D. none

Answer: B

111. In the scatter operation ____ node send message to every other node

A. single

B. double

C. triple

D. none

Answer: A

112. The gather Operation is exactly the inverse of _____

A. scatter operation

B. recursion operation

C. execution

D. none

Answer: A

113. Similar communication pattern to all-to-all broadcast except in the_____

A. reverse order

B. parallel order

C. straight order

D. vertical order

Answer: A

114. Group communication operations are built using which primitives?

A. one to all

B. all to all

C. point to point

D. none of these

Answer: C

115. ___ can be performed in an identical fashion by inverting the process.

A. recursive doubling

B. reduction

C. broadcast

D. none of these

Answer: B

116. Broadcast and reduction operations on a mesh is performed

A. along the rows

B. along the columns

C. both a and b concurrently

D. none of these

Answer: C

117. Cost Analysis on a ring is

A. (ts + twm)(p - 1)

B. (ts - twm)(p + 1)

C. (tw + tsm)(p - 1)

D. (tw - tsm)(p + 1)

Answer: A

118. Cost Analysis on a mesh is

A. 2ts(sqrt(p) + 1) + twm(p - 1)

B. 2tw(sqrt(p) + 1) + tsm(p - 1)

C. 2tw(sqrt(p) - 1) + tsm(p - 1)

D. 2ts(sqrt(p) - 1) + twm(p - 1)

Answer: D

119. Communication between two directly link nodes

A. cut-through routing

B. store-and-forward routing

C. nearest neighbour communication

D. none

Answer: C

120. All-to-one communication (reduction) is the dual of _____ broadcast.

A. all-to-all

B. one-to-all

C. one-to-one

D. all-to-one

Answer: B

121. Which is known as Reduction?

A. all-to-one

B. all-to-all

C. one-to-one

D. one-to-all

Answer: A

122. Which is known as Broadcast?

A. one-to-one

B. one-to-all

C. all-to-all

D. all-to-one

Answer: B

123. The dual of all-to-all broadcast is

A. all-to-all reduction

B. all-to-one reduction

C. both

D. none

Answer: A

124. All-to-all broadcast algorithm for the 2D mesh is based on the

A. linear array algorithm

B. ring algorithm

C. both

D. none

Answer: B

125. In the first phase of 2D Mesh All to All, the message size is ___

A. p

B. m*sqrt(p)

C. m

D. p*sqrt(m)

Answer: C