High Performance Computing (HPC) MCQs [set-4]

76. Scaling Characteristics of Parallel Programs Ts is

A. increase

B. constant

C. decreases

D. none

Answer: B

77. Speedup tends to saturate and efficiency _____ as a consequence of Amdahl's law.

A. increase

B. constant

C. decreases

D. none

Answer: C

78. Speedup obtained when the problem size is _____ linearly with the number of processing elements.

A. increase

B. constant

C. decreases

D. depend on problem size

Answer: A

79. The n × n matrix is partitioned among n processors, with each processor storing complete ___ of the matrix.

A. row

B. column

C. both

D. depend on processor

Answer: A

80. cost-optimal parallel systems have an efficiency of ___

A. 1

B. n

C. logn

D. complex

Answer: A

81. The n × n matrix is partitioned among n2 processors such that each processor owns a _____ element.

A. n

B. 2n

C. single

D. double

Answer: C

82. how many basic communication operations are used in matrix vector multiplication

A. 1

B. 2

C. 3

D. 4

Answer: C

83. In DNS algorithm of matrix multiplication it used

A. 1d partition

B. 2d partition

C. 3d partition

D. both a,b

Answer: C

84. In the Pipelined Execution, steps contain

A. normalization

B. communication

C. elimination

D. all

Answer: D

85. the cost of the parallel algorithm is higher than the sequential run time by a factor of __

A. 2020-03-02 00:00:00

B. 2020-02-03 00:00:00

C. 3*2

D. 2/3+3/2

Answer: A

86. The load imbalance problem in Parallel Gaussian Elimination: can be alleviated by using a ____ mapping

A. acyclic

B. cyclic

C. both

D. none

Answer: B

87. A parallel algorithm is evaluated by its runtime in function of

A. the input size,

B. the number of processors,

C. the communication parameters.

D. all

Answer: D

88. For a problem consisting of W units of work, p__W processors can be used optimally.

A. <=

B. >=

C. <

D. >

Answer: A

89. C(W)__?(W) for optimality (necessary condition).

A. >

B. <

C. <=

D. equals

Answer: D

90. many interactions in oractical parallel programs occur in _____ pattern

A. well defined

B. zig-zac

C. reverse

D. straight

Answer: A

91. efficient implementation of basic communication operation can improve

A. performance

B. communication

C. algorithm

D. all

Answer: A

92. efficient use of basic communication operations can reduce

A. development effort and

B. software quality

C. both

D. none

Answer: A

93. Group communication operations are built using_____ Messenging primitives.

A. point-to-point

B. one-to-all

C. all-to-one

D. none

Answer: A

94. one processor has a piece of data and it need to send to everyone is

A. one -to-all

B. all-to-one

C. point -to-point

D. all of above

Answer: A

95. the dual of one -to-all is

A. all-to-one reduction

B. one -to-all reduction

C. pnoint -to-point reducntion

D. none

Answer: A

96. Data items must be combined piece-wise and the result made available at

A. target processor finally

B. target variable finatlalyrget receiver finally

Answer: A

97. wimpleat way to send p-1 messages from source to the other p-1 processors

A. algorithm

B. communication

C. concurrency

D. receiver

Answer: C

98. In a eight node ring, node ____ is source of broadcast

A. 1

B. 2

C. 8

D. 0

Answer: D

99. The processors compute _____ product of the vector element and the loval matrix

A. local

B. global

C. both

D. none

Answer: A

100. one to all broadcast use

A. recursive doubling

B. simple algorithm

C. both

D. none

Answer: A