High Performance Computing (HPC) MCQs [set-3]

51. What makes a CUDA code runs in parallel

A. __global__ indicates parallel execution of code

B. main() function indicates parallel execution of code

C. kernel name outside triple angle bracket indicates excecution of kernel n times in parallel

D. first parameter value inside triple angle bracket (n) indicates excecution of kernel n times in parallel

Answer: D

52. In _____, the number of elements to be sorted is small enough to fit into the process's main memory.

A. internal sorting

B. internal searching

C. external sorting

D. external searching

Answer: A

53. _____ algorithms use auxiliary storage (such as tapes and hard disks) for sorting because the number of elements to be sorted is too large to fit into memory.

A. internal sorting

B. internal searching

C. external sorting

D. external searching

Answer: C

54. _____ can be comparison-based or noncomparison-based.

A. searching

B. sorting

C. both a and b

D. none of above

Answer: B

55. The fundamental operation of comparison-based sorting is _____.

A. compare-exchange

B. searching

C. sorting

D. swapping

Answer: A

56. The complexity of bubble sort is ?(n2).

A. true

B. false

Answer: A

57. Bubble sort is difficult to parallelize since the algorithm has no concurrency.

A. true

B. false

Answer: A

58. Quicksort is one of the most common sorting algorithms for sequential computers because of its simplicity, low overhead, and optimal average complexity.

A. true

B. false

Answer: A

59. The performance of quicksort depends critically on the quality of the _____-.

A. non-pivote

B. pivot

C. center element

D. len of array

Answer: B

60. the complexity of quicksort is O(nlog n).

A. true

B. false

Answer: A

61. The main advantage of _____ is that its storage requirement is linear in the depth of the state space being searched.

A. bfs

B. dfs

C. a and b

D. none of above

Answer: B

62. _____ algorithms use a heuristic to guide search.

A. bfs

B. dfs

C. a and b

D. none of above

Answer: A

63. If the heuristic is admissible, the BFS finds the optimal solution.

A. true

B. false

Answer: A

64. The search overhead factor of the parallel system is defined as the ratio of the work done by the parallel formulation to that done by the sequential formulation

A. true

B. false

Answer: A

65. The critical issue in parallel depth-first search algorithms is the distribution of the search space among the processors.

A. true

B. false

Answer: A

66. Graph search involves a closed list, where the major operation is a _____

A. sorting

B. searching

C. lookup

D. none of above

Answer: C

67. Breadth First Search is equivalent to which of the traversal in the Binary Trees?

A. pre-order traversal

B. post-order traversal

C. level-order traversal

D. in-order traversal

Answer: C

68. Time Complexity of Breadth First Search is? (V – number of vertices, E – number of edges)

A. o(v + e)

B. o(v)

C. o(e)

D. o(v*e)

Answer: A

69. Which of the following is not an application of Breadth First Search?

A. when the graph is a binary tree

B. when the graph is a linked list

C. when the graph is a n-ary tree

D. when the graph is a ternary tree

Answer: B

70. In BFS, how many times a node is visited?

A. once

B. twice

C. equivalent to number of indegree of the node

D. thrice

Answer: C

71. Is Best First Search a searching algorithm used in graphs.

A. true

B. false

Answer: A

72. Which of the following is not a stable sorting algorithm in its typical implementation.

A. insertion sort

B. merge sort

C. quick sort

D. bubble sort

Answer: C

73. Which of the following is not true about comparison based sorting algorithms?

A. the minimum possible time complexity of a comparison based sorting algorithm is o(nlogn) for a random input array

B. any comparison based sorting algorithm can be made stable by using position as a criteria when two elements are compared

C. counting sort is not a comparison based sorting algortihm

D. heap sort is not a comparison based sorting algorithm.

Answer: D

74. mathematically efficiency is

A. e=s/p

B. e=p/s

C. e*s=p/2

D. e=p+e/e

Answer: A

75. Cost of a parallel system is sometimes referred to____ of product

A. work

B. processor time

C. both

D. none

Answer: C