13/12/2019

Parallel and Distributed Computing (WQD7008)
Quiz 3

Answer all the questions:

1. What are the five V's of Big Data? (2 Marks)

   A. Volume   B. Velocity   C. Variety   D. All the above

2. All of the following accurately describe Hadoop, EXCEPT? (2 Marks)

   A. Open source   B. Real-time   C. Java-based   D. Distributed computing approach

3. What are the main components of Big Data? (2 Marks)

   A. MapReduce   B. HDFS   C. YARN   D. All of these

4. What are the main components of HDFS? (2 Marks)

   A. MapReduce   B. HDFS   C. YARN   D. All of these

Map the provided keywords in A, B, C and D to the short statements in E, F, G and H. (8 Marks)

   A. Volume   B. Variety   C. Velocity   D. Veracity

5. Different data structure. __D__   6. The speed at which data is streamed __C__   7. Different data format __B__   8. The scale of data's amount _A__

9. What are the main components of MapReduce? (2 Marks)

   A. Map and Reduce   B. Intermediate key   C. Shuffle   D. All of these

10. The split phase is son in _____? (2 Marks)

   A. Map   B. Input   C. Reduce   D. Combiner

Map the provided keywords in A, B to the corresponding phases in MapReduce task. (10 Marks)

   A. Map   B. Reduce

11. Searching _B_   12. Mapping __A__   13. Reducing__B__   14. Shuffle & Sort__A__
15. Tokenizing input _A_

16. What are the right order of MapReduce tasks? (2 Marks)

   A. Input, Maps, Sort, Shuffle, Split, Reduce   B. Input, Maps, Shuffle, Split, Sort, Reduce

   C. Input, Maps, Split, Sort, Shuffle, Reduce   D. Input, Split, Maps, Shuffle, Sort, Reduce

17. Synchronization is done in _____? (2 Marks)

   A. Map   B. Reduce   C. Map & Reduce   D. Partitioning

18. The complexity of a sorting algorithm is referred to the _____? (2 Marks)

     A. Time   B. Space   C. Stability   D. All of these

19. The term Internal and External sorting is implied to _____? (2 Marks)
   A. In Internal sorting, all the records are in main memory whereas in External records are on auxiliary store.
   B. In external sorting, all the records are in auxiliary store whereas Internal all the records are in main memory.
   C. Internal sort is a recursive approach where the sort is done in itself.
   D. External sort is a type that send input to an external algorithm.

Define the time complexity of the sorting algorithm in questions 13 to 19 by choosing the correct time complexities in (A to E). (16 Marks)

A. $O(n)$ B. $O(n^2)$ C. $O(nlgn)$ D. $O(lgn)$ E. $O(dn)$ F. $O(lg^2n)$

20. Quick Sort __B___   21. Merge Sort __C___   22. Odd Even Sort __B___   23. Selection Sort __B___

24. Bitonic Sort __F___   25. Radix Sort __E___   26. Bubble Sort __B___   27. Insertion Sort __B___

28. Using bitonic sort, maximum how many CPU cores can be assign to sort the following input? (20 Marks)
Input: "2, 10, 20, 30, 5, 5, 4, 3"

     A. 1   B. 2   C. 4   D. The sequence is not bitonic

29. Using Odd Even Sort, how many steps takes the following input gets sorted? (20 Marks)
Input: "3, 5, 8, 9, 7, 4, 2, 1"

     A. 8   B. 6   C. 4   D. 3

30. ~~What is General Purpose GPU (GPGPU)? (2 Marks)~~
   ~~A. is a special type of GPU that is used for graphic and game development.~~
   ~~B. is a graphics processing unit that performs non-specialized calculations that would typically be conducted by the CPU.~~
   ~~C. is a combination of ordinary GPU and RAM.~~
   ~~D. is a cluster of GPUs.~~

Map the provided keywords in A, B and C to the corresponding interfaces. (4 Marks)

   A. High Simplicity,   B. Low Simplicity,   C. Low Simplicity,   D. High Simplicity, High
      Low Flexibility   High Flexibility   Low Flexibility   Flexibility

31. Application Specific Library _____   32. Customized GPU codes (CUDA/OpenCL)_____

33. Which of the following statement is not a correct step of GPU custom code? (2 Marks)

A. Allocating memory   B. Transferring data   C. Launching the kernel to   D. Transfer results back
on the GPU   from CPU to GPU   operate on the CPU cores to CPU

Total Marks 100.