

Dept. of CSE, BUET
CSE453, Jan 2021
CT1, Full marks: 20
Duration 20 minutes + 5 minutes for upload

Answer the following questions

Q1.

- a. The sequential and start-up cost of a task is 20%. Find the scaleup for this task using 1, 2 and 3 nodes. 3+2
- b. Draw the graph and explain.

Q2.

5

“For range queries on partitioning attribute, one to a few nodes may need to be accessed and remaining nodes are available for other queries”, explain the statement for the following case:

The schema = employee(e-id, name, designation, salary),

partitioning vector Salary = [10000, 20000, 30000, 40000, 50000, 60000, 80000]

the query: SELECT * FROM employee WHERE salary >= 55000

Q3.

10

There are 5 nodes: N1, N2, N3, N4 and N5 in a parallel database system. The schema of the relation person is as follows:

Person(NID, Name, Thana, District, Age)

The minimum age is 1 and maximum is 100. Perform partitioning of person relation on age into 5 nodes using virtual node partitioning method. Consider the number of virtual nodes is 20 times the number of real nodes. You have to show the partition vector, lower 2 and upper 2 partitions, algorithm for allocation of virtual nodes into real nodes.