Aashita Patwari
004810708

1 a) CHECK(weight <= 5)

2) a) CREATE VIEW EmployeeNames AS SELECT ename FROM Employees

CREATE VIEW DeptInfo AS SELECT dept, AVG(salary) as avgsalary FROM Employees GROUP BY dept

b) GRANT SELECT, DELETE ON EmployeeNames TO mike
GRANT SELECT ON DeptInfo TO mike

c) Yes it does. There is no way the secretary can correlate between the two tables EmployeeNames and DeptInfo to see where each person works and get an idea of the average salary for a group of people, let alone view the salary of a single employee.
The only rare case where he will be able to look at the salary if a specific individual is if that individual is the only person in the department and he knows the name and department of that person because the average salary would be the individual's salary.

d) GRANT SELECT, UPDATE ON Employees TO joe WITH GRANT OPTION;
GRANT SELECT, UPDATE ON EmployeeNames TO joe WITH GRANT OPTION;

Joe cannot read the DeptInfo view.

4) a) capacity = cylinders * platters * sectors * sector size = 10,000 * 6 * 500 * 1024 = 30,000,000 KiB

b) average read time = (seek time) + (rotational delay) + (transfer time) = 10ms + 0.5*(60000/6000)ms + (60000/6000)/500=15.02 ms

c) size of a tuple = 2 + 4 + 4 + 4 + 4 + 4 + 30 + 20 = 72
number of tuples in one block = 1024/72 = 14 tuples
number of blocks for 1000 tuples = 1000/14 = 72 blocks

d) Time to read 72 sequential blocks = 15 + 72*0.02 = 16.44 ms

e) Time to read a cluster = 15 + 3*0.02 = 15.06
Time to read 24 random clusters = 15.06 * 24 = 361.44 ms

f) If n is the number of tuples where the year is 2005, the expected time is n*15.02 ms. It is helpful