CSE411

Sample Questions on Storage, RAID and Indexing

These are some sample questions. Solving only these problems are not sufficient. You have to go through the book.

Q1:

a. There are 4 disks of 2TB each. The student relation has 9 blocks B1, B2, B3 …… B9. Show the storage of these blocks into 4 disks using RAID level 5.
b. You have been given a number of 4TB disks. An ecommerce system requires 20 TB of effective storage using RAID 1. Find the total number of disks required for this storage system.
c. Student relation has blocks B1, B2, …… B10. Show the storage of these blocks to your storage system. You have been given a number of 4TB disks.

Q2:

a. An ecommerce system requires 20 TB of effective storage using RAID 5. Find the total number of disks required for this storage system.
b. Student relation has blocks B1, B2, …… B10. Show the storage of these blocks to your storage system.

Q3: (a) Construct a sparse index structure on customer id (c-id) for the relation given below:

c-id	Name	City
C-1	Fatema	City 1
C-2	Sharif	City 1
C-3	Zahid	City 1
C-4	Abid	City 1
C-5	Fatema	City 1
C-6	Sharif	City 1
C-7	Zahid	City 1
C-8	Abid	City 1
C-9	Sharif	City 1
C-10	Zahid	City 1
C-11	Abid	City 1
C-12	Fatema	City 1

(b) Do you need to create index for city? Why? (3)

(c) create a sparse index on c-id where C-5 and C-6 will not have index entry. Find c-id = C-6 using the index.

(d) Write SQL to create an index on name attribute and construct the index on name. Explain the type of index.

Q4. Compare RAID level 1 and 5 with examples.

Q5. Explain worst case and best case seek time and block transfer time.
Q6. There are 2TB disks. You need 10TB storage that will be reliable and require frequent update. Design the storage system.

Q7: Construct an index on dept_name for the following relation. 5

ID	Name	Dept_name	Salary
10101	Srinivasan	Comp. Sci.	65000
12121	Wu	Finance	90000
15151	Mozart	Music	40000
22222	Einstein	Physics	95000
32343	El Said	History	60000
33456	Gold	Physics	87000
45565	Katz	Comp. Sci.	75000
58583	Califieri	History	62000
76543	Singh	Finance	80000
76766	Crick	Biology	72000
83821	Brandt	Comp. Sci.	92000
98345	Kim	Elec. Eng.	80000