Dept. of CSE, BUET

CSE 215, QUIZ-1 (After Mid term)

Full marks: 20

Duration: 20 minutes for quiz + 7 minutes for upload

There are 5 questions. Answer any 4 questions   4 × 5 = 20

Q1. Explain secondary storage. Why the performance of these storages is important for the performance of the DBMS?   3 +2

Q2. In a disk storage system, the outer most track number is 1 and inner most track number is 50000 for each platter. The number of sectors per track are given as follows:

Track number range	Number of sectors per track
1 - 20000	2000
20001 – 40000	1500
40001 - 50000	1000

The size of the sector is 512 Byte. There are 2 sides in each platter and total of 5 platters in the disk. Find the storage size of   3+1+1

a. Three different types of tracks.
b. Size of one platter in GB showing details.
c. Size of the disk in GB.

Q3. You have been given 8 disks of 4TB each and customer relation has 14 blocks (B0, B1, B2, B3, B4, B5, …… B14). Show the storage of customer relation using

a. RAID level 5 storage system   3+2
b. Why the parity block is distributed among the disks?

Q4. The record size of person relation of National ID database is 1200 bytes and database block size is 4 KB. (4+1)

    a. Show the storage of 10 records into 3 blocks with record i starting from byte $n*(i-1)$, where n is the size of each record. Some records will cross the block boundary.

Show the blocks as follows:

Block 0

Record 0 (1200 bytes)
Record 1 (1200 bytes)
…….
Partial Record – (byte – to byte ---)
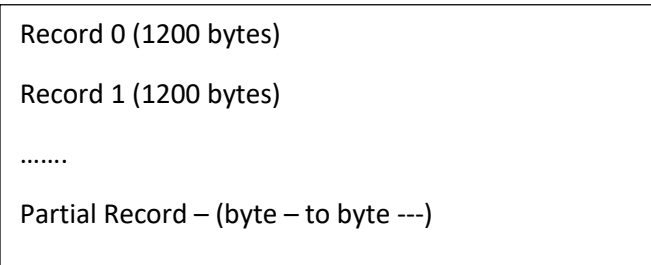
Block 1

……………

Last block

    b. Explain the effect of overlapping of records between two consecutive blocks.

Q5. In DBMS, the following information about relations are stored in data dictionary. (3+2)

names of relations, number of attributes for that relation, storage organization and location

names, types, position and lengths of attributes of each relation

name of index, index type and the attribute on which the index is created.

    a. Show the data dictionary schema for the above.
    b. Using the schema, explain how DBMS maintains the uniqueness of relation name, the uniqueness of attributes for that relation and the uniqueness of index name for that relation.