1) Question were on disk to calculate

   i) Capacity

   ii) Transfer time.

2) Disk 1 and Disk 2 are data disks.
Disk 3 is mirror of Disk 1 and Disk 4 is parity checker (Recovery disk) of disk 2 and disk 3.

Identify which of the pairs of disks can be recovered if crashed simultaneously.

a) Disk 1 and Disk 3

b) Disk 2 and Disk 3

c) Disk 2 and Disk 4

d) Disk 1 and Disk 4

e) Disk 1 and Disk 2

3) If Records = 3000, ~~5~~ records per block, The Index used is B+ tree Sparse of order 10.

3) A file has 3000 records. A block can store either 5 records or node of a B+ tree of order 10. The index used is Sparse. Calculate the blocks required to store ~~Relation~~ file and index.

4) R has no duplicates and S may have duplicates. Identify whether which of the following are equivalent.

i) $\delta(R \times S)$

ii) $\delta(\delta(R) \times S)$

iii) $\delta(R \times \delta(S))$

iv) $R \times \delta(S)$

v) $\delta R \times S$.

5) Question on greedy algorithm

6) Question was framed in such a way u need to have good understanding of every term in Linear Hashing (like n, m, i, c)

7) $B(R) = 9000$ $B(S) = 4000$.

We use optimised variant of Hashing using and regular Merge variant. Main memory of 20 Blocks.

a) Minimum of passes required in Merge join.

b) No of IO required to join.

c) No of passes in Hash join.

d) No of IO's required to join.

e) S is clustered index on B and non-clustered on C. Identify the optimal query plan and estimate the value. V(S,b) = 5000 V(S,c) = 1,000,000.

$\sigma_{B=10 \wedge C=2}(S)$

T(S) = 1,000,000

B(S) = 400,000

{S is clustered and design}