COSC 6360   QUIZ #5   DECEMBER 7, 2012

Closed book. You can have with you one single-sided 8½ by 11 page of notes.

1. What prevents Blue FS from eliminating all inconsistencies between the copies of files stored on the client and those stored on the server? (10 points)

    Obsolete question.

2. According to the authors of Blue FS, what is the main advantage of ***bursty device access patterns***? (10 points)

    Obsolete question.

3. How is the FAWN ***datastore*** organized? (10 points)?

    As a log, analogous to that of a log-structured file system except that each virtual node has its own log.

    Why? (10 points)

    Because SSDs perform sequential writes much more effectively than small random writes.

    What is the purpose of allocating several randomly selected ***virtual nodes*** to each FAWN node? (10 points)

    In order to distribute the workload of a failed physical node among the various successors of its logical nodes.

4. Assuming we want to build a FARSITE system that would tolerate the failure of two arbitrary nodes,

    a) What would be the minimum number of nodes in each directory group? (5 points)   *seven* **nodes**

    b) On how many nodes should each file be replicated? (5 points   *three* **nodes**

5. A recent study seems to indicate that nearly all irrecoverable read errors are the result of incorrect writes and can be detected and corrected by reading each block just after it has been written. Assuming this conclusion is true,

    a) How would it affect ***disk scrubbing*** procedures in archival storage systems? (10 points)?

    It would make it unnecessary.

    b) Which feature of Pergamum would become much less necessary? (10 points)

    Intra-device parity.

6. How do **LBFS** use chunks to reduce its data bandwidth? 10 points)

    Obsolete question.

    What criterion does LBFS use to define chunk boundaries? (10 points)

    Obsolete question.