National University of Computer and Emerging Sciences

Lahore Campus

# Advance Database Concepts

**Date:**

**Instructor(s)**

Mr. Muhammad Naveed

# Quiz #03 (A)

**Course code:** CS4064

**Total marks: 10**

**Questions: 1**

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Roll No Section Student Signature

**Attempt all the questions.**

***CLO 2#:*** Apply the models and approaches in order to become enabled to select and apply appropriate methods for a particular case

**Q1:**

Assume: A block size is *B= 1024* bytes, file has *r= 1,000,000* records, each record is *100* bytes long, a block pointer is *P= 10* bytes, a record pointer is $P_R$= *11* bytes, and a key field for the index is 6 bytes long. A database system uses a B+-trees index on key field. A leaf node and non-leaf node are one block in size and contain as many keys (and appropriate pointers) as will fit in a block. How many blocks will this index use? Also estimate the number of block accesses needed to search for and retrieve a record from the file given its key value using the B+-tree index. Show your working. [10]