**SESSION FEB/MAR 2022**

**PROGRAM Masters of COMPUTER APPLICATION (MCA)**

**SEMESTER- III**

**course CODE & NAME- DCA8142&OPEN SOURCE DB SYSTEMS**

**Assignment Set – 1**

**1 a. Explain the components of the database system.**

**Ans:** Database Management System (DBMS) is a complex set of software programs that enables users to create and maintain a database. In this section, we discuss the types of software components that constitute a DBMS. The following fig 1 illustrates the typical DBMS components.

The figure is divided into two halves. The top half of the figure refers to the various users of the database environment and their

**b. Explain ACID properties in transaction management.**

**Ans:** The transaction is an operation that reads or writes a value on the database. Every transaction must adhere to four properties. Taking their initials letters collectively known as ACID properties. These properties are,

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**2 a. Briefly explain the various models of open-source software model.**

**Ans:** The Open-Source Software (OSS) model is an alternate software engineering technique applied to modern commercial developmental models. The definite advantage of the Open- Source model is its expansion and

**b. What is forking? Explain forking in brief.**

**Ans: ‘Forking’** is one of the main concepts in software development. Forking happens when developers take a copy of source code from one software package and start developing it independently. It creates a separate and distinct piece of the software. A successful fork code can reduce development

**3**. **Explain relational model concepts and Relational algebra operations in detail.**

**Ans:** The relational model is a data model. In the relational model, we can represent the database as a collection of relations. Relations are represented as tables. Each table consists of a set of values or records. The figure 1 shows an example of a relational model database.

In the given example,

**Assignment Set – 2nd**

**4 a. Explain different data types used in PHP.**

**Ans:** The most commonly used PHP data structures are Arrays, strings, Files, etc.

**a) PHP Arrays**

The array is a collection of similar types of data using the common name. In an array, each array value is accessed by index. There are mainly three types of arrays. These are given below:

• Numeric Array

**b. Explain the SQL Language and its’ advance features.**

**Ans:** This section describes how PostgreSQL is providing SQL support. As we know PostgreSQL is a relational database management system (RDBMS). This means that the data is stored in the form of Relations (tables). Usually in an RDBMS data is stored in the form of tables. There are

**5 a. Define Indices. Explain different Index types.**

**Ans:** Indices are a special type of database object. The use of Indices will greatly increase database performance and also it enables faster execution of statements involving comparative criteria. An index helps to find the targeted rows more efficiently by tracking the data on one or more columns in a table. In this section we are going to discuss the different types of indices available, and when we can

**6. Explain different datatypes used in PHP. Also Explain the PHP control structures.**

## Ans: PHP Data Types

Variables can store data of different types, and different data types can do different things.

PHP supports the following data types:

* String