Faculty of Computers & Artificial Intelligence
2st Term (2019-2020) Final Exam
class: تخلفات   **year   2020**
Course Code: DBA372
Course name: Database Management Systems

Benha University
Final Date: 7 / 6 /2020
Total Marks: Pass / Fail
Examiner(s): Dr. Noha El-Attar

Research submission: From 31 May to 7 June 2020

a) **Write a research project in ONE of the following topics:**

Topic No. 1

Discuss how can you apply the four main actions for establishing a database for HEALTHCARE ORGANIZATION. This database must contain at least 5 relations or more as you need. You have to use the appropriate SQL statements in declaring and manipulating this database, with defining the appropriate constraints on attributes values to achieve referential integrity. Also, specify all the relationships among the relations of your database. Finally, decide the suitable architecture for your database and discuss why you choose this architecture.

Topic No. 2

A Web-based system to make AIRLINE reservations and sell airline tickets, discuss which DBMS architecture would you choose to establish the database of this system, Why you choose it and Why would the other architectures not be a good choice. Think of different users for this database and state the types of applications and type of interface would each need. Draw a complete ERD for the proposed form of this database which must contain at least 7 relations, and discuss the meaning and difference between the entity, entity types and entity set.

Topic No. 3

Consider the LIBRARY relational database schema that contains at least 5 tables. Write appropriate SQL DDL statements for declaring this database schema and specify the keys and referential triggered actions. Based on your expected form of the library database, choose some attributes that should have indexes specified on them, then show how can the key and foreign key constraints be enforced by the DBMS. State how you can convert your database from the 1st NF to the 3rd NF by clarifying the steps. Specify a number of queries in SQL that are needed by your database application. Note, the queries must cover all types of queries you have been studied during this course.

b) **Notes: please, your research must contain the following elements:**

- The research project should be comprehensive in all dimensions of the required topic and cover all its aspects and elements.

GOOD LUCK,

Examiner(s)

Head of Departement /
Program Coordinator