

Subject : Database System
Department : Computer Science
Date : 6/1/2016



Subject Code : 3101
Level : 3
Time : 2 hour

Final -Term Examination- First Semester 2015/2016

Answer the following questions :

Question No. 1 : (15 Marks)

- What do you mean by database?
- Explain why it is necessary to select the target DBMS before beginning the physical database design phase
- What are the advantages of DBMS?
- Compare the hierarchical and Network databases
- What is Hypertext database ?

Question No. 2 : (15 Marks)

- Design E-R Diagrams to Misr Higher Institute (Choose only three Departments)
- Describe what entities represent in an ER model and provide examples of entities with a physical or conceptual existence
- Explain the difference between a weak and a strong entity set

Question No. 3 : (20 Marks)

- What do you know about normalization in databases and then explain the various advantages ?
- Explain Data Independence & its types.
- Explain the various types of normalization.
- Describe the types of update anomalies that may occur on a relation that has redundant data.

Question No. 4 : (20 Marks)

- Through your study of the structured query language, type the appropriate commands to do the following
 - Add the attribute ' net salary' in the employee table.
 - Create a view that displays the details of the employees who work in the Department of Administration.
 - List all employees who age is greater than average age and live in Cairo from employees table.
 - Find employees who increase their salaries for 4000 or over the age of 60 from employees table.
 - Find first and last name for students who obtained a very good grade from students table.
 - Remove the attribute ' Dmgr_phon' from department table .
 - Delete all of the students who failed from students table.
- What is the difference between delete ,drop and truncate ?
- What is the difference between a HAVING CLAUSE and a WHERE CLAUSE ?

*With my best wishes
Dr hany khalifa*

Ministry of Higher Education
Misr Higher Institute for Commerce & Computers



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Answer the following questions :

Question No. 1 : (15 Marks)

a) Define each of the following

- | | | |
|------------------------|---------------|-------------------|
| - System Administrator | - weak entity | - Database |
| - Middleware | - Entities | - DBMS |
| - Hypertext database | - Field | - Data redundancy |

b) Compare the Relational and Hierarchical databases

c) What are the disadvantages of DBMS ?

Question No. 2 : (15 Marks)

a) What are the benefits of (ERD) ?

b) What is a derived attribute ? Give an example.

c) What are multivalued attributes , and how can they be handled within the database design?

Question No. 3 : (20 Marks)

a) Discuss how normalization may be used in database design ?

b) Describe the types of update anomalies that may occur on a table that has redundant data ?

c) Describe how strong and weak entities differ and provide an example of each

d) What are the advantages and disadvantages for each of :

1. Normalization
2. Network Database

Question No. 4 : (20 Marks)

a) Through your study of the structured query language, type the appropriate commands to do the following

- 1) Add the attribute ' net salary' in the employee table.
- 2) Create a view that displays the details of the employees who work in the Department of Administration.
- 3) Find first and last name for students who obtained a very good grade from students table.
- 4) Remove the attribute ' Dmgr_phon' from department table .
- 5) Delete all of the students who failed from students table.
- 6) How to display 4th highest (salary) record from customer table?

With my best wishes
Dr hany khalifa