

**ALLAMA IQBAL OPEN UNIVERSITY ISLAMABAD  
(Department of Business Administration)**

**DATABASE MANAGEMENT (815)**

**CHECK LIST**

**SEMESTER: AUTUMN 2013**

This packet comprises the following material:

1. Text Book
2. Course Outline
3. Assignment No 1 & 2
4. Assignment Forms (2 sets)

Please contact at the address given below if you find any thing missing out of the packet.

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**WARNING**

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM AWARD OF DEGREE/CERTIFICATE, IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENTS BORROWED OR STOLEN FROM OTHER(S) AS ONE'S OWN WILL BE PENALIZED AS DEFINED IN "AIOU PLAGIARISM POLICY".**

**Course: Database Management (815)**

**Semester: Autumn 2013**

**Level: MBA**

**Total Marks: 100**

**ASSIGNMENT No. 1**  
**Unit (1-5)**

- Q. 1 Explain various types of Database Languages. You may support your answer with examples from the local environment. (20)
- Q. 2 What kind of roles a database supervisor, database administrator and data entry operator have to perform? Explain in detail. (20)
- Q. 3 Draw an ER-Diagram for a Purchase and Sales System of a retail company which must include the following entities: (20)
1. Sales Order
  2. Purchase Order
  3. Products
  4. Supplier
  5. Employees
- Q. 4 Explain the process for developing a Conceptual Schema Set in detail. (20)
- Q. 5 Write short notes on the followings:
- (a) Multi Database System (7)
  - (b) Database Design (6)
  - (c) Storage Management (7)

**ASSIGNMENT No. 2**

**Total Marks: 100**

This assignment is a research-oriented activity. You are required to obtain information relating to any business or commercial organization, write a paper of about 10 pages on the topic allotted to you. You are required to prepare two copies of Assignment # 2. Submit one copy to your tutor/teacher for evaluation and the second copy for presentation in the workshop in the presence of your resource persons and classmates, which will be held at the end of the semester prior to final examination. Student studying at the approved Study Centers of AIOU are required to present the same at their study centers.

- i. Introduction to the topic
- ii. Important sub-topics
- iii. Practical study of the organization with respect to the topic
- iv. Review of theoretical and practical situations

- v. Merits, demerits, deficiencies or strengths of the organization with respect to topic under study
- vi. Conclusions and recommendations
- vii. Annex, if any

You may use transparencies, charts or any other material for effective presentation. You are required to select one of the following topics according to the last digit of your roll number. For example, if your roll number is D-3427185 then you will select topic number 5 (the last digit).

- 0. Relational Database Management System in an Educational Institute
- 1. Object Oriented Database System in a High-Tech Company
- 2. File Processing System Vs. Database Management System
- 3. Application of Management Information System (MIS) in a Telecommunication Organization
- 4. Security and Integrity Issues in Database Management and their Solutions
- 5. Database Development Process
- 6. Database Recovery Facilities
- 7. Role of Database Management in Business Information Systems
- 8. Application of Decision Support System (DSS) in an Organization
- 9. Issues and Challenges of a Database Management System and their Solutions

## **DATABASE MANAGEMENT**

### **Course Outline (MBA-815)**

#### **Unit 1. Introduction**

- 1.1. Purpose of Database Systems
- 1.2. View of Data
- 1.3. Data Models
- 1.4. Database Languages
- 1.5. Overall System Structure
- 1.6. Database Administrator

#### **Unit 2. Elements of Database Systems**

- 2.1. Transaction Management
- 2.2. Storage Management
- 2.3. Communication Management
- 2.4. Database Users
- 2.5. Application Software
- 2.6. System Staff and its Role

#### **Unit 3. Data Modeling and Structuring**

- 3.1. Database Design
- 3.2. Conceptual, Internal and External view of Data
- 3.3. Conceptual Designing Evaluation
- 3.4. Backend Vs. Frontend
- 3.5. Designing Tools
- 3.6. CASE (Computer Aided Software Engineering) Tools
- 3.7. Entities Attributes and Entities Class
- 3.8. Data Structure: Linked Lists, Inverted Lists, B-tree, Indexes

#### **Unit 4. Database Models**

- 4.1. Hierarchical and Network Models
- 4.2. Relational Database Model
- 4.3. Distributed Databases
- 4.4. Multi database Systems
- 4.5. Object-oriented Database System

- 4.6. Developing a Conceptual Schema Set
- 4.7. Entity Relationship Model

### **Unit 5. Relational Model**

- 5.1. Structure of Relational Model
- 5.2. Relational Algebra
- 5.3. The Tuple Relational Calculus
- 5.4. Domain Relational Calculus
- 5.5. Extended Relational Algebra Operations
- 5.6. Modification of the Database
- 5.7. Views

### **Unit 6. SQL**

- 6.1. Background
- 6.2. Basic Structure
- 6.3. Set Operations
- 6.4. Aggregate Functions
- 6.5. Null Values
- 6.6. Nested Sub-queries
- 6.7. Data Definition Language (DDL)
- 6.8. Embedded SQL

### **Unit 7. Integrity Constraints**

- 7.1. Domain Constraints
- 7.2. Referential Integrity
- 7.3. Assertions
- 7.4. Triggers
- 7.5. Functional Dependencies

### **Unit 8. Relational Database Design**

- 8.1. Pitfalls of Relational Database Design
- 8.2. Decomposition
- 8.3. Normalization using Functional Dependencies
- 8.4. Normalization using Multi-valued Dependencies
- 8.5. Normalization using Join Dependencies
- 8.6. Domain Key Normal Form
- 8.7. Alternative Approaches to Databases Design

### **Unit 9. Special Issues in Database Management**

- 9.1. Security and Integrity
- 9.2. Remote Backup System
- 9.3. Real Time Transaction System
- 9.4. Data Warehousing
- 9.5. The World Wide Web
- 9.6. Human Information Processing
- 9.7. Decision Support System

### **Recommended Books:**

Modern Database Management (4<sup>th</sup> Ed) By: *Fred R. McFadden, Jeffery A. Hoffer*

Database System Concepts (3<sup>rd</sup> Ed) By: *Silberschatz, A; Korth, H.F; Sudarshan*

An Introduction to Database Systems By: *Date, C.J. Addison-Welley Publishing Company*  
1990

