

Post Graduate Diploma in Chemo-informatics
Annual Examination – 2010
Chemo Informatics Database Design & their Management
PGDC – 104

Time: Two and Half Hours

Max. Marks: 70

Note: Paper is divided into Three Sections. Attempt all questions from Section-A, Any SIX questions from Section-B and Any THREE questions from Section-C.

Section-A

Attempt ALL Questions. (10X1 = 10)

1. What is a 'tuple'?
 - a. A row or record in a database table.
 - b. Another name for the key linking different tables in a database.
 - c. Another name for a table in an RDBMS.
 - d. An attribute attached to a record.
2. The primary key column may contain NULL values.
 - a. True
 - b. False
3. A database is an organized collection of _____ related data.
 - a. Not
 - b. Badly
 - c. Physically
 - d. Logically
4. Which of the following is not a valid aggregate function?
 - a. COUNT
 - b. COMPUTE
 - c. SUM
 - d. MAX
5. The 'NULL' represents
 - a. 0
 - b. blank space
 - c. absence of any value
 - d. none of the above

6. To communicate with an RDBMS, you use:
- a. Network
 - b. SQL
 - c. Table
 - d. Normal Form
7. Which one is Codd's Rule No 2:
- a. View Updating Rule
 - b. Physical Data independence Rule
 - c. Guaranteed Access Rule
 - d. The Information Rule
8. The person who is having central control over data and programs accessing that data
- a. DBA
 - b. Database Designer
 - c. Developer
 - d. None
9. Write the full form of CLEC.
10. In MS-ACCESS, a Memo field can store up to ----- characters.

Section-B

Attempt any SIX Questions. (6X5 = 30)

1. What are the differences between DDL & DML. Explain with four examples of each.
2. What are the advantages of DBMS?
3. Explain how the "GROUP By" clause works. What is the difference between the WHERE and HAVING clauses? Explain them with the help of an example for each.
4. Explain Boolean operators supported in SQL with suitable example.
5. Explain the keywords specifically included for the BioCatalysis database.
6. Consider the following relations:

- a. Employee (empID, FirstName, LastName, address, DOB, sex, position, deptNo)
- b. Department (deptNo, deptName, mgr, empID)

Write the SQL statements for the following:

- (i) List the name and addresses of all employees who work for the IT department.
 - (ii) Update the position of the Employee to DBA whose empID is E100.
7. Describe the procedure of creating Report using Report Wizard in MS-Access.
 8. Differentiate between DELETE and DROP SQL statements with suitable example.

Section-C

Attempt any THREE Questions. (3X10 = 30)

1. What is normalization? Explain 1NF and 2NF with suitable example.
2. Write a note on CODD Rules.
3.
 - (i) Define Data and Information.
 - (ii) Differentiate between a Database and a Database System.
 - (iii) Compare file system with database system.
 - (iv) Explain the Architecture of the Database System.
4. In context of DBMS, define the followings:
 - (i) Entity, Tuples, Attributes
 - (ii) Primary Key
 - (iii) Foreign Key
 - (iv) Referential Integrity
 - (v) Entity Integrity
 - (vi) Physical & Logical Data Independence
5. Write an Overview on Failed Reactions Database. Explain the different criteria used when selecting Failed Reaction Database.