

7. Write a note on :

(15)

- (a) Functional dependencies.
 - (b) Closure of attribute sets.
 - (c) FOR and FOREACH.
 - (d) View data in SQL.
 - (e) Modify and manage tables in SQL.
-

Roll No.

Total Pages : 4

325405

May, 2023

**BSC (Life Science) - IV Semester
Introduction to Database System (OCSC-201A)**

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) What are the different types of database users. (1.5)
- (b) What do you mean by DBMS catalog and metadata? (1.5)
- (c) What do you mean by entity set and attribute set? (1.5)
- (d) Define primary key and foreign key. (1.5)
- (e) Briefly explain cardinality constraints with examples. (1.5)

- (f) What is data independence? Explain its types. (1.5)
- (g) What do you mean by table and field in SQL? (1.5)
- (h) How to remove duplicate rows in SQL? (1.5)
- (i) Describe any four functions of Database Administrator (DBA). (1.5)
- (j) Discuss various front end tools used in databases? (1.5)

PART-B

- 2. (a) What is Normalization? Explain different normal forms. (10)
- (b) Explain functional decomposition with an example. (5)

- 3. (a) Compare file-oriented approach and database-oriented approach. Discuss pros and cons of both the approaches. (5)
- (b) Discuss different database languages. (10)

- 4. In a university, a Student enrolls in Courses. A student must be assigned to at least one or more Courses. Each course is taught by a single Professor. To maintain instruction quality, a Professor can deliver only one course. List the entities, relationships, cardinalities, attributes. (15)

- 5. (a) 1. Given a relation $R(A, B, C, D)$ and Functional Dependency set $FD = \{AB \rightarrow CD, B \rightarrow C\}$, determine whether the given R is in 2NF? If not convert it into 2 NF. (5)
- 2. Given a relation $R(A, B, C, D, E)$ and Functional Dependency set $FD = \{A \rightarrow B, B \rightarrow E, C \rightarrow D\}$, determine whether the given R is in 2NF? If not convert it into 2 NF.
- (b) Explain different integrity constraints with an example. (10)

- 6. (a) The Student table consists of Student_ID, Stu_Name, Stu_Subject_ID, Stu_Marks, and Stu_Age columns, and the Subject table consists of Subject_ID and Subject_Name columns. (10)
- 1. Write a query to create the table in SQL.
- 2. Write a query to insert the data into the table.
- 3. Write a query that shows all the rows of those Students whose age is 20.
- 4. Write a query that shows the maximum and minimum marks of the Stu_Marks column from the Student table.
- 5. Write a query that creates Student_Marks table from the existing Student table.
- (b) Explain Armstrong Axioms. (5)