No. of Printed Pages : 4   **BCS–092**

CERTIFICATE IN MOBILE APPLICATION DEVELOPMENT (CMAD)
Term-End Examination
June, 2024
BCS-092 : INTRODUCTION TO DATABASES

Time : 3 Hours   *Maximum Marks : 75*

Note :   Question 1 is compulsory. Attempt *any three* questions from the rest.

1. (a)   What is an Entity Integrity constraint and domain integrity constraint ? Give example of each.

                                                       3 each

   (b)   Explain the architecture of database mangement system and how it helps in achieving Data Independence.   5 each

   (c)   Explain the task involved during the implementation stage of database life cycle.

                                                       4 each

   (d)   What is an ER diagram ? Construct an ER diagram for banking system. Bank account can be savings or recurring accounts and bank gives different kinds of Loans to its customers. Bank has several branches at different locations. Each branch maintains the account details of the customers.

   (e)   Consider the following relations and write SQL queries :

   EMPLOYEE (Emp_id, f_name, l_name, salary, startdate, job_title, deptno)

   DEPARATMENT (deptno, dept_location, dept_name)

   (i)   Create EMPLOYEE table with all possible constraints.

   (ii)   List full name of the employee and employee numbers of all the employees who are working in Department whose deptno is "D001".

   (iii)   Determine the number of departments.

(iv) Update location of department "D002" to Mumbai.

(v) Delete all employees who were hired in 1982.

2. (a) Explain five major problems of traditional file based approach. 5

(b) Differentiate between following :

(i) Logical and Physical data Independence.

(2½ × 2)

(ii) Strong and Weak entity.

(c) What are database anomalies ? Explain how these anomalies are resolved. 5

3. (a) What is a data model ? How you can classify DBMS. 5

(b) Consider the following schema : 10

DOCTOR (doctor_id, doctor_name, Patient_no, Patient_name, P_phone, Prescription_date, dosage)

Note that Patient may visit doctor many times on different dates. Normalize this schema upto 3rd NF.

P.T.O.

4. (a) What is the need of outer-join ? Explain all the types of outer-join with an example for each.

10

(b) Maintenance is an important phase in database life cycle. Explain the activities involved in this phase. 5

5. Explain following terms with Diagram/Examples :

(3 × 5)

(a) Cardinality and its types.

(b) Inner-join.

(c) COUNT and SUM functions.

(d) Meta data.

(e) Types of Attributes in ER diagram.

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