PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING
END TERM EXAMINATION - JAN 2023

Semester : Semester III - 2021
Course Code : CSE2074
Course Name : Sem III - CSE2074 - Database Management Systems
Program : B.Tech. - CSE (All)

Date : 16-JAN-2023
Time : 1.00PM - 4.00PM
Max Marks : 100
Weightage : 50%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.

PART A

ANSWER ALL THE TEN QUESTIONS   **10 X 2 = 20M**

1. How student schema is represented in DBMS? Illustrate with an example?

    (CO1) [Knowledge]

2. What data dictionary contains?

    (CO1) [Knowledge]

3. What's normalization, and how does it differ from denormalization?

    (CO2) [Knowledge]

4. What is a Cross Join, explain with syntax.

    (CO2) [Knowledge]

5. Explain DDL, DML, DCL?

    (CO3) [Knowledge]

6. List 2 difference between Primary key and Foreign Key

    (CO3) [Knowledge]

7. What is 1 NF ?

    (CO3) [Knowledge]

8. List two disadvantages of file processing and how DBMS overcomes them?

    (CO4) [Knowledge]

9. Define Instances and Schema of the database?

    (CO4) [Knowledge]

10. How to convert 3NF to BCNF?

    (CO5) [Knowledge]

PART B

ANSWER ALL THE FIVE QUESTIONS   **5 X 10 = 50M**

11. Create an Employee table with attributes id, name, salary, deptid and Department table contains attributes dno, dname. & Dept_Details table contains deptno, totalsalary.

    a. Create a trigger to update the totalsalary of a Dept_Details table when a new employee is hired.
    b. Write SQL query to drop the trigger

                                                                                (CO1) [Comprehension]

12. Consider the table EMPLOYEE (empno , deptno, ename ,salary, designation, joiningdate, DOB, city) and write below SQL queries.

    a. Display employee name and employee number in an increasing order of salary
    b. Display employee name and employee number dept wise
    c. Display total salary of all employee
    d. Display employee name having experience more than 3 years
    e. Display employee name staring with "S" and working in deptno 1002

                                                                                (CO2) [Comprehension]

13. What do you understand by functional dependency explain with example also explain the following
    a) Full functional dependency and Partial functional dependency
    b) Trivial functional dependency and non trivial functional dependency
                                                                                (CO3) [Comprehension]

14. Define Transaction with example? Suppose we have two transactions T1 and T2, this schedule suffers from which problem explain in brief.

T1	T2
Read(A)	
a=a+100	
Write (A)	
	Read(A)
	Commit
Rollback	

                                                                                (CO5) [Comprehension]

15. Create a music databases ER Diagram.There are three entity album,artist and track.
    a.Create the relationship between each entity.
    b.Create different attributes for each entity.(at-least 5 attribues each)
    c.Write the cardinality for each attribute.
    d.Define Weak entity and also find any weak enity is present in the ER diagram or not.
    e.Also create total pariticipation between entities.
                                                                                (CO5) [Comprehension]

PART C

ANSWER ALL THE TWO QUESTIONS   **2 X 15 = 30M**

16. Consider the following relations for a book club:
    Members(Member_id, Name, Designation, Age)
    Books(Bid, Btitle, BAuthor, BPublisher, BPrice)
    Reserves(Member_id, Bid, Date)
    where Bid is the book identification, Btitle is Book title, BPublisher is book publisher, BPrice is Book price.
    Specify the following queries in SQL

    a. Find the names of members who are professors older than 45 years.
    b. List the titles of books reserved by professors
    c. Find IDs of members who have not reserved books that cost more than Rs 500.
    d. Find the authors and titles of books reserved on 27-May-2010
    e. Find the names of members who have reserved all books.

                                                            (CO5) [Application]

17. Define Boyce-Codd normal form. How does BCNF differ from 3NF? Explaint with suitable examples .

                                                            (CO5) [Application]

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