ST. JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE -27
B.C.A III SEMESTER
END SEMESTER EXAMINATION: NOVEMBER 2020
CA 3418 –DATABASE MANAGEMENT SYSTEMS

Time – 2.5 hours

Max Marks-70

This question paper contains 2 printed pages and 3 parts

Part A

Answer ALL of the following.   10X2=20

1. What are the responsibilities of a DBA?
2. What is data independence of DBMS?
3. List the properties of ER diagram.
4. What is the difference between 3NF and BCNF. Explain with an example.
5. What are entity integrity and referential integrity constraints?
6. Define domain, attribute, tuple and relation.
7. Differentiate between where clause and having clause.
8. Write the SQL queries to create a table with employee details like eno, ename, bdate, address, dno, age, phone number and to List the name, eno, dname and phone number of the employee who are also the managers of the respective departments.
9. What is lost update problem? Give an example.
10. What is the importance ofdatabase recovery in database systems?

Part B

Answer any FIVE of the following   5x6=30

11. Explain the three-level architecture of database systems with a neat diagram.
12. What are the application programs? Explain database access for application programs.
13. How we can convert relationship sets with key constraints into tables?

14. What is Normalization? Explain Normalization techniques using functional dependencies with relevant examples.

15. What is a view? How to specify a view? Write about view implementation techniques.

16. Differentiate between single level indexing and multi level indexing methods with suitable examples.

17.

Consider the following tables:

Sailors (sid, sname, rating, age)

Reserves (sid, bid, day)

Boats (bid, bname, color)

Write the following queries in SQL:

a) Find the name of sailors who have reserved boat 103.

b) Find the names and ages of sailors with a rating above 7.

c) Find the names of sailors who have reserved a red boat.

Part C

Answer any TWO of the following   **2x10=20**

18. Construct an Entity-Relationship diagram for an online shopping system .List your assumptions and the requirements considered by you for conceptual database design for the above system.

19. a) List the ACID properties. Explain the usefulness of each with example. [5]
    b) What benefit does two-phase locking provide. Discuss if they provide any disadvantages.
    [5]

20. What do you mean by Distributed databases? What are the fragmentation policies used in distributed databases? Discuss each with an example.

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