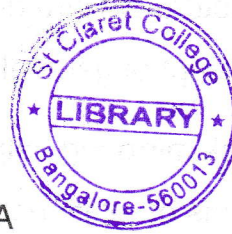**SG – 626**

II Semester B.C.A. Examination, Sept./Oct. 2021
(F+R) (CBCS) (2014-15 and Onwards)
COMPUTER SCIENCE
BCA 204 : Database Management System

Time : 3 Hours

Max. Marks : 70

Instruction : Answer **all** Sections.

SECTION – A

Answer **any ten** questions. **Each** question carries **two** marks.　　(10×2=20)

1. What is DBMS ?

2. Write down any two responsibilities of database administrator.

3. Name any four types of attributes.

4. Define functional dependency.

5. How are storage devices classified ?

6. What is group by clause ? Give example.

7. What is heap file ? How are pages organized in a heap file ?

8. Define primary key and foreign key.

9. List any two advantages of PL/SQL.

10. Define two-phase locking.

11. Explain commit and Rollback commands.

12. What is RAID ?

SECTION – B

Answer **any five** questions. **Each** question carries **ten** marks.　　(5×10=50)

13. a) Explain the advantages of DBMS. 　　　　　　　　5

　　b) Explain different people behind DBMS. 　　　　　　5

P.T.O.

14. a) Design an ER-diagram for keeping track of information about company database, with atleast four entities.   **7**

   b) What is a relationship ? Give an example of one-to-one and many-to-many relationships.   **3**

15. a) Explain the structure of Hard disk.   **5**

   b) Discuss the concept of generalization and specialization.   **5**

16. a) Discuss how disk mirroring helps in improving reliability.   **5**

   b) List the operations of relational algebra and the purpose of each.   **5**

17. a) Discuss the various types of join operations.   **5**

   b) Explain briefly DDL statements with syntax and examples.   **5**

18. a) Define transaction. Explain different states of transaction with a neat state transaction diagram.   **5**

   b) Explain 2NF and 3NF with examples.   **5**

19. a) Write an SQL Query for the following :   **6**

   i) To create a table of employee database with minimum 5 fields.

   ii) To insert two records in the employee table.

   iii) To add new field to the employee table.

   b) Explain ACID properties of transaction.   **4**

20. a) What is a view in SQL, and how is it defined ? Discuss the problems that may arise when one attempts to update a view.   **5**

   b) What is two-phase locking protocol ? How does it guarantee serializability ? **5**

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