

Registration Number:

Date & Session:



**ST. JOSEPH'S UNIVERSITY, BENGALURU -27**  
**MSc (BIG DATA ANALYTICS) – I SEMESTER**  
**SEMESTER EXAMINATION: OCTOBER 2022**  
**(Examination conducted in December 2022)**  
**BDA 1521: DATABASE MANAGEMENT SYSTEM**

**Time: 2 Hours**

**Max Marks: 50**

**This paper contains TWO printed pages and THREE parts**

**PART- A**

**Answer ALL questions**

**5 x 1=5**

1. Define database and DBMS.
2. Expand DDL and DML.
3. What do you mean by attribute in ER diagram.
4. How trivial dependency is different from non-trivial dependency?
5. Give the syntax for ORDER BY.

**PART- B**

**Answer any FIVE questions**

**5 x 3 = 15**

6. Outline any five functions of DBA.
7. How physical data independence is different from logical data Independence.
8. Illustrate specialization with example.
9. What do you mean by composite and multivalued attribute? Give the ER notation.
10. Define spurious tuples. Give example.
11. With suitable examples explain how to create new table from existing table with and without records.
12. Explain wildcard characters of pattern matching.

**PART- C**

**Answer any THREE questions.**

**3 x 10 = 30**

13. a) Define normalization? Explain any three normal forms with example. (7)  
b) Define full functional dependency with example (3)
14. a) Explain the different advantages of using DBMS over traditional file processing (7)  
b) What do you mean by hierarchical data model? (3)

15. a) Create table **student** and **association** with own column names and records.  
Illustrate the left join, right join, inner join and view for the same. (7)
- b) With example explain UPDATE statement. (3)
16. Consider the following information related to UNIVERSITY database. Construct an ER diagram with suitable Entities, Attributes and cardinality ration.
- Professors have SSN, name, age, rank and research specialty.
  - Projects have project number, starting date, ending date and budget.
  - Graduate students have regnum, name, gender, date\_of\_birth, contact no, age and degree.
  - Each project is managed by one professor. Each project is worked on by one or more professor (known as project co-Investigators). Each project is worked on by one or more graduate student.
  - Each student is supervised by a professor.
  - Department have deptName, DepNumber and location. Each student belongs to a department. Number of hours where student is working on a project will be stored.
  - Professor belongs/manages a department. University will store the details of professor's dependent like depname, Date-of-birth and relationship