

Roll No. \_\_\_\_\_

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**SIVS-N-193-A-18<sup>1</sup>**  
**B.Sc. IVth Semester Degree Examination**  
**COMPUTER SCIENCE**  
**Database Management System**  
**Paper - 401**

Time : 3 Hours

Maximum Marks : 80

**SECTION-A**

**I Answer ALL the questions**

**(15× 1 = 15)**

- 1) Define database system
- 2) What is data redundancy
- 3) What is schema and instance
- 4) Define tuple
- 5) What is degree of a relation
- 6) What is system catalog
- 7) Write the General syntax for UPDATE statement in SQL
- 8) Define Normalization
- 9) Define Primary key
- 10) Mention any five DBMS packages
- 11) Write any two group functions in SQL
- 12) What is Trivial functional dependency
- 13) Define Referential integrity
- 14) Define transaction
- 15) What is data abstraction

**SECTION-B**

**II.** Answer any **FIVE** questions

**(5× 5= 25)**

- 16) Explain the characteristics of DBMS
- 17) What are the job responsibilities of a DBA
- 18) What is Data Independence? Explain physical and logical data Independence
- 19) Explain various key constraints of relational model
- 20) Explain multivalued Independencies with example
- 21) Write a note on concurrency control techniques
- 22) What are the DDL commands in SQL? Explain briefly

**SECTION-C**

**III.** Answer any **FOUR** questions

**(4× 10= 40)**

- 23) Write a note on users of a DBMS
- 24) What are the different types of data model? Explain any one with advantages and disadvantages
- 25) Explain enhanced ER model
- 26) Consider the following table and write SQL statement for the queries  
EMP(Empno, Ename, Lname, Date of joining, Salary, Dno)  
DEPT(Dno, Dname, Loc)
  - a) Retrieve all the employees who are working for DNo 10 and 70
  - b) Retrieve all the employees who are drawing more than or equal to 20,000 salary
  - c) Retrieve the average salary for each department
  - d) Display the fname, salary, Dept Name & location for each employee
- 27) Write a note on Database recovery techniques
- 28) Explain relational algebraic operations in details.