

BCA 401

B.C.A. (PART-II) EXAMINATION, 2024-25

(Fourth Semester)

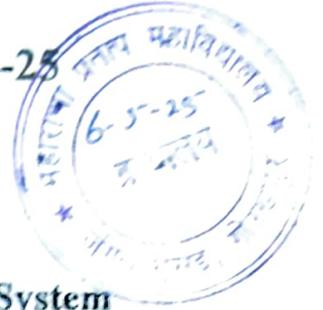
Paper : I

BCA-401 : Introduction To Database Management System

Time : Three Hours]

[Maximum Marks : 70

5455



- Note:** (i) Answer **Five** Questions in all.
(ii) Question No.-1 is **Compulsory**.
(iii) Answer remaining **four** questions, selecting **two** questions from each Section A and B.
(iv) All questions carry equal marks.
1. Answer all parts of the following :
- (a) Define functional dependency
 - (b) What is difference between file oriented and DBMS approach ?
 - (c) What is the purpose of ROLLBACK Command ?
 - (d) What is the different levels in three schema architecture ?

Section-A

2. Define database management system. Explain its functions and components in detail.

3. What is database models ? Explain different types of database models in detail with examples.
4. What are ACID properties in DBMS ? Explain their role in transaction management.
5. Write the SQL query for the following employee table for given query :

Emp.id	Name	Age	Salary
101	A	34	20000
102	B	27	18000
103	C	30	10000
104	D	18	25000

- (i) Find the total number of employees
- (ii) Find the sum of all employee's salary
- (iii) Display all employee records with age \geq 20
- (iv) Find highest salary of employee.
- (v) To display the structure of a table.

Section-B

6. (a) What do you understand by E-R diagrams?
Draw the E-R diagram for college management system with E-R functionalities.

- (b) What is a referential integrity constraint ? why do we need it ? Explain with the help of suitable example.
7. (a) What are the various characteristics of SQL? Discuss five aggregate functions with suitable examples.
- (b) Discuss the selection & projection of relational algebra with suitable example.
8. (a) Explain the super key, primary key and candidate key with example in detail.
- (b) Differentiate between Cartesian product and Natural join operations used in relational algebra.
9. Write notes on any two of the following:
- (a) Normalization
- (b) DBA
- (c) Strong and weak entity.

