

INDIRA UNIVERSITY, PUNE

SCHOOL OF INFORMATION TECHNOLOGY-SOIT BSC CYS

Backlog Examination (2025 Pattern) April/ May – 2026 - Semester – I

Subject Name: Database Management Systems
Subject Code: 25CYS103T

Max. Marks: 25
Time: 1:30 Hrs.

Instructions

- All Questions are Compulsory.
- Draw correct diagram wherever necessary.

CO #	Cognitive Ability	Course Outcome
CO1	Remember	Recall fundamental concepts, architectures, and components of database systems and their roles in managing data.
CO2	Understand	Explain principles of data modeling, constraints, and relational structures to represent real-world scenarios effectively.
CO3	Apply	Use database languages and tools to define, manipulate, and retrieve data in varied application contexts.

Q1.	Attempt any 5 out of 7. (1 mark each) a) List out functions of database. b) What is Specialization? c) Define “domain” constraint. d) List the usage of Drop command in SQL. e) What is nested subquery? f) Define Data Redundancy. g) Define Candidate Key.	(5 Marks)	CO1
Q2.	Attempt any 2 out of 4. (5 marks each) a) Explain Database Management System (DBMS), summarize its primary functions. b) Explain Referential Integrity Constraint. Interpret its importance in relational databases. c) Outline the SET operations in SQL. d) Explain functional dependency. Compare trivial and nontrivial dependency with example	(10 Marks)	CO2

Q.3.	Attempt all questions. (5 marks each) (10 Marks) a) In a nursery, the plants are sold to the customers. These plants are flowering and non-flowering. Nutrients are given to the plants with some quantity. Nutrients include pesticides, watering and manure. i) Construct an E-R diagram. ii) Build relational database from above ER diagram. b) Consider the following relations : Movie (Mno, Mname, Budget) Actor (Ano, Aname, Role) Actor and Movie are related with one to many relationship. Develop a relational database in 3NF and Solve the following queries in SQL. i) List the name of movie in which 'Amir' has acted. ii) Count the number of actor in movie 'Padmavat'. iii) Find the name of actors starting with 'A'. OR	CO3
Q.3	Attempt all questions. (10 Marks) a) Identify the closure set of the following set of functional dependencies for a relational scheme R (A,B,C,D,E) ,F= {A→BC, CD→E, B→D, E→A}. List out the candidate keys of R. (5 Marks) b) Explain various data types in SQL. (3 Marks) c) Define i. Attribute ii. tuple (2 Marks)	CO3
