Total nos. of printed pages: 02

Roll No: | | | | | | | | | | | | | |

PRANVEER SINGH INSTITUTE OF TECHNOLOGY, KANPUR

CT -1

Odd Semester Session 2023-24

B. Tech.-5th Semester

Database Management System (KCS-501)

CO Number	Course Outcome
CO1	Define [**L1: Remember**] facts, terms, basic concepts of database systems.
CO2	Explain [**L2: Understand**] basic understanding of facts and ideas of database like keys, constraints, transaction processing and others.
CO3	Demonstrate [**L3: Apply**] acquired knowledge, facts, techniques and rules of database management system like Normalization, Serializability, transaction control and others.
CO4	Examine [**L4: Analyze**] and breaking information into parts by identifying motives or causes; making inferences and finding evidence to support generalization in different problems of database management.

Time: 1.5 Hrs. M. M. 15

Section A

(1X3 = 3 Marks)

Q1. Attempt all questions:

a) Define DBMS catalog. CO1

b) Explain Logical and Physical Data Independence. CO2

c) Define Weak Entity with suitable example. CO1

Section B

(2X4 = 8 Marks)

Q2. Attempt all questions:

a i) List the characteristics of DBMS. CO1

Or

ii) Define the types of users in DBMS. CO1

b i) Explain Integrity constraint and types with suitable example. CO2

Or

ii) Explain types of relationships among entities with suitable diagram. CO2

c i) Describe 3-Schema architecture with suitable diagram. CO2

Or

ii) Describe Generalization and Specialization with suitable diagram. CO2

d i) Draw the ER diagram for a hospital to maintain the records of various departments, rooms, and doctors in the hospital. It also maintains records of the regular patients, patients admitted in the hospital, the checkup of patients done by the registered doctors, the patients may be operated by doctor on call, admitted patients also discharged from the hospital. CO3

Or

ii) Draw the ER diagram for different trains, train status, and passengers. The record of train includes its number, name, source, destination, and days on which it is available, whereas record of train status includes dates for which tickets can be booked, total number of seats available, and number of seats already booked. CO3

Section C

(4X1 = 4 Marks)

Q3 CO3

Consider the following schema and write SQL syntax as mentioned-

i) **Reserves (Sid, Bid, day, colour)**
DATATYPE-Sid and Bid are integer, day should datetime and Colour is having character type data only.
CONSTRAINTS- Sid and Bid as PRIMARY KEY, Colour have only three type values. (Green/Red/Blue).
Also, assign the date of booking should be of any future date only. (not current or past date).

Or

ii) Consider the following schema: CO3

1. Apply ER to relational model conversion rule for the above ER.
2. Construct DDL syntax for every relation which identified in step 1.