Set-2	Reg.No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

VI SEMESTER B.TECH. (COMPUTER SCIENCE & ENGINEERING)
END SEMESTER (Make Up) EXAMINATION, APR/MAY 2024

SUBJECT: PRINCIPLES OF DATABASE MANAGEMENT SYSTEMS
[CSE 4304]

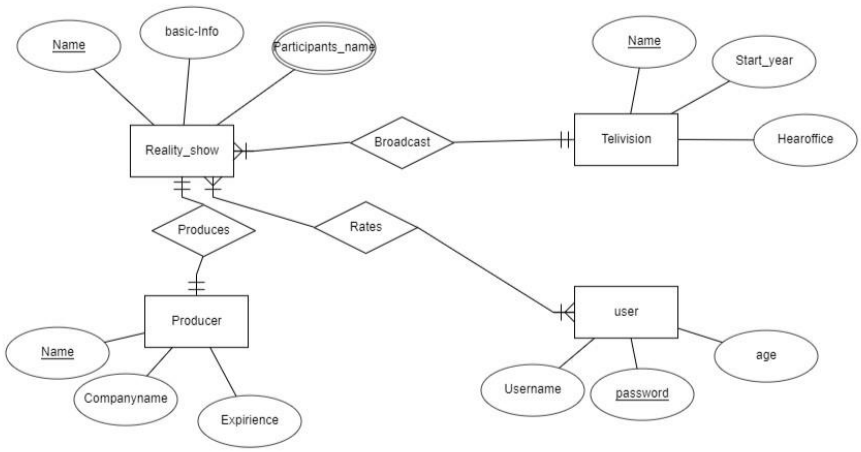
REVISED CREDIT SYSTEM
/ / 2024

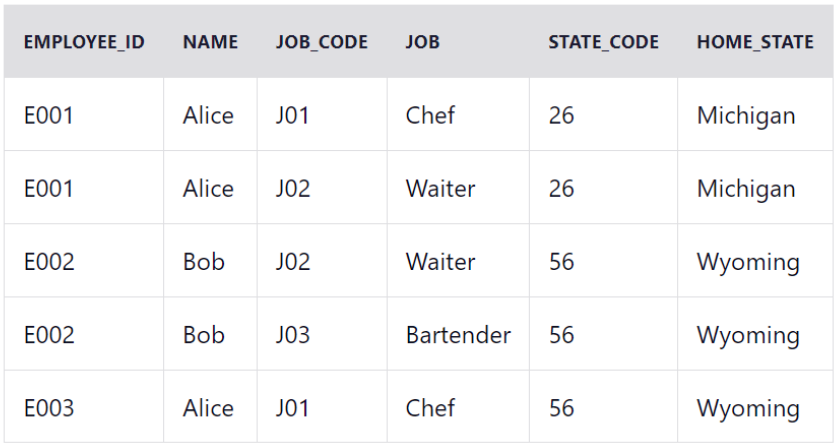
Time: 180 Minutes **MAX. MARKS: 50**

Instructions to Candidates:

- Answer **ALL** the questions.
- Missing data may be suitably assumed.

Q.No	Questions	Marks	AHEP LOs	CO	Blooms Taxonomy
1A.	Explain any four fundamental differences between file system and database system	(4M)	1	1	2
1B.	Demonstrate the violation of different constraints through an example of an insert operation in a database system?	(4M)	1	1	3
1C.	Name different types of attributes with example.	(2M)	1	1	2
2A.	Consider a database for Hospital system, compose the create statement to create two tables, Doctor and Patient using the following relational schema and insert 3 records for each table. Assume data type ,primary key and foreign key appropriately. **Doctor (DoctorID, Doctorname, Salary)** **Patient(PatientID, PatientName, DoctorID)**	(4M)	2	2	6
2B.	Consider the relational database given below: Sailors (sid: integer, sname: string, rating: integer, age: real) Boats (bid: integer, bname: string, color: string) i) Create SQL statement to find the names of sailors who are older than the oldest sailor with a rating of 10.	(4M)	2	2	6

	ii) Create a SQL statement to determine the age of the youngest sailor who is eligible to vote (18 years or older) for each rating level where there are at least two sailors eligible to vote.				
2C.	Illustrate the functionality of LIKE operator in SQL queries.	(2M)	2	2	2
3A.	Construct a ER diagram for the following scenario :: The Library Management System database keeps track of user with the following considerations – The system keeps track of the staff with a single point authentication system comprising login_Id and password. Staff maintains the book catalog with its ISBN, Book title, price(in INR), category(novel, general, story), author_Number . A publisher has publisher Id, Year when the book was published, and name of the book. A publisher can publish many books but a book is published by only one publisher. Different Staff maintains multiple Books. Authentication system provides login to multiple staffs who will be identified by staff_id and name.	(4M)	5	3	3
3B.	Analyse and convert the following ERD into Relational schema.  	(3M)	5	3	4
3C.	Summarize different Characteristics of Relations in a relational database management system.	(3M)	5	3	5
4A.	Imagine we're building a restaurant management application. A Unnormalized table is given to you. Deduct the following table into 2NF.	(4M)	2	4	5

	 **Fig : UnNormalized Table**				
4B.	Discuss with example, different types of functional dependencies in database management systems.	(4M)	2	4	6
4C.	Explain Multivalued Dependency in a relation.	(2M)	2	4	2
5A.	Describe the working principle of Hash file organization in a database system.	(4M)	1	5	2
5B.	Demonstrate sequential file organization with example.	(4M)	1	5	5
5C.	Recall the reasons associated with Transaction failure.	(2M)	1	5	3