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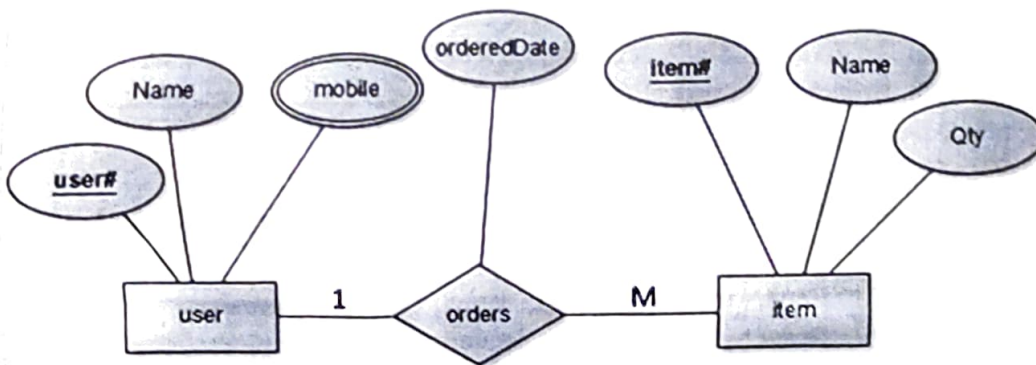
VIT
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act. 1956)

Continuous Assessment Test-I – May '23

Programme	: B.Tech Electronics and Computer Engineering	Semester	: Fall Inter Sem(2023-24)
Course Title	: Database Systems	Code	: BCSE302L
		Class Nbr(s)	: CH2022232501053 CH2022232501054 CH2022232501055 CH2022232501056 CH2022232501064
Faculty (s)	: Dr. R.Reena Roy Dr. K. P. Vijayakumar Dr. K. Parkavi Dr. A.Sherly Alphonse Dr. A.Sudha	Slot	: F2+TF2
Time	: 90 Mins	Max. Marks	: 50 marks

Answer all the Questions

1. Consider the entity-relationship diagram.



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i) Map this ER diagram to a relational model with a minimum number of tables. [6 marks]

ii) Identify the primary key, foreign key, and other suitable constraints related to the tables. Mention its Significance. [4 marks]

2. Vtop web system is developed to feed the details of all the individuals at VIT, such as Deans, Faculties, Staff, and Students. Deans can track the complete details of faculties, staff, students, and faculties. Faculties can see their details and all the student's details. Students can view only the respective information needed for them. Software Development Cell solves when there is an issue in data retrieval, and it helps to keep track

of the information relevant to their courses.

- a) Identify the actors and workers behind the screen involved while using the application system and their different roles.[5 marks]
- b) Clarify how the details are processed and retrieved across the various components in the Database System Architecture.[5 marks]

3. Assume that VIT-SCOPE has decided to set up a sports club with the below-mentioned actions.

- i. Sports clubs can be categorized as Cricket clubs, Football clubs, Tennis clubs, and Chess for faculties and students.
- ii. A student can join any one of the sports clubs. The faculties can join many clubs.
- iii. Each sports club has a coach who trains all the registered members.
- iv. Each club member can be identified using the unique ID printed on the jersey.
- v. The coach has a name, experience, salary, and field of expertise.
- vi. The faculty dependent can also be a member of the club.

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Help the School sports Director to develop the EER model to identify the entities and corresponding attributes with generalization and specialization principles.

Note: You are free to add relevant attributes if needed.

4. Consider the web based digital library system,

- i) Suggest the suitable data model that can be used to describe the system with a neat sketch. [5 Marks]
- ii) Identify and explain the ways to achieve data independence in the given system.[5 marks]

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5. Write the SQL queries for the given database schema and show the results in table form:

Bank(BankName, Branch, BranchId, Asset)

Employee(Eid, Ename, Designation, Address)

Customer(Cid, AcNo, Cname, balance, mobileno, Address,BranchId)

- i. Create the tables with the appropriate constraints for the given schema [8 Marks]
 - a. Primary Key - BranchId, Eid, AcNo, Cid
 - b. NOT NULL - BankName, Address, EName
 - c. Foreign Key - BranchId in Customer Table
 - d. balance should be greater than or equal to Rs.5000
- ii. Display the customer name those who have a balance above Rs.50,000 [2 Marks]

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