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| **Department of Computer Science and Engineering** |
| **Course: B. Tech** | **Year:III** | **Semester: I** | **Home Assignment -1** | **A.Y:2023-24** |
| **Subject Code:20CS3502** | **Subject Name: Database Management Systems** | **Regulation: PVP20** |
| **Duration:1 Week** |  | **Date:25/8/23** |
|  **Answer all the Questions. 5M**  |
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| **Q. No** |  |  **CO** | **Level** |
| **1.** | A university registrar’s office maintains data about the following entities:(a) COURSES- including number, title, credits, syllabus, andprerequisites;(b) COURSE OFFERINGS- including course number, year, semester, section number, instructor(s), timings, and classroom;(c) STUDENTS- including student-id, name, and program;(d) INSTRUCTORS - including identification number, name,department, and title.Further, the enrolment of students in courses and grades awarded to students in each course they are enrolled for must be appropriately modelled.Construct an E-R diagram for the registrar’s office. Determine the mapping constraints for the given scenario. | **CO4** | **L4** |
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|  **2.** | Analyze the following scenario and represent the Conceptual and Logical Design of the database.We require to develop an information management system that supports some of the services involved in an Online Bookstore (e.g., Amazon.com). The Book store has registered customers in order to sell books. It also contains publishers’ information and a customer can place the book he desires to buy on a shopping basket.* A customer has an email, name, phone and address.
* A book has and ISBN, year, title and price.
* A Publisher has a name, address, phone and url and publishes several books, but one book can be published by one publisher
* An author has a name and address and can write several books
* Books can be written by only one author and they are stored on many warehouses and one warehouse has many books.
* A customer can have several shopping baskets
* Each shopping basket belongs to one customer, where each shopping basket can contain several books.
 | **CO4** | **L4** |
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| **3.** | Consider the following relations for a database that keeps track of automobile sales in a car dealership (OPTION refers to some optional equipment installed on an automobile):CAR(serial\_no, model, manufacturer, place)OPTION(serial\_no, option\_name, price)SALE(salesperson\_id, serial\_no, date, price)SALESPERSON(salesperson\_id, name, phone)First, specify the foreign keys for this schema, stating any assumptions you make. Next, populate the relations with a few sample tuples, and then give an example of an insertion in the SALE and SALESPERSON relations that violates the referential integrity constraints and of another insertion that does not. | **CO4** | **L4** |