K.K.Wagh Institute of Engineering Education and Research, Nashik
Department of Computer Engineering
Mock Insem Exam

Course Name: Database Management Systems **Course Code: 310241**
Academic Year 2022-2023 **Semester: I**
Class: TEA **Maximum Marks: 30**
Date: 6/9/2022 **Duration: 1 hr**

Instructions

1. **Solve Q1 OR Q2 , Q3 OR Q4**
2. **Neat diagrams must be drawn**
3. **Assume suitable data if necessary**

Course Outcomes (COs)

Course Outcome	After successful completion of course
CO310241 /6 .1	Create logical design of a database for a given application using ER-Model (Blooms Level 6)
CO310241 /6 .2	Design and implement a database for a real life application and formulate queries using SQL & PL/SQL (Blooms Level 6)
CO310241 /6 .3	apply normalization technique for efficient database design (Blooms Level 3)
CO310241 /6 .4	Illustrate the need of protocols for Concurrency Control and recovery for transaction management (Blooms Level 2)
CO310241 /6 .5	Classify NOSQL data models and make use of MangoDB (Blooms Level 2)
CO310241 /6 .6	Define Complex data types and Object-oriented databases (Blooms Level 1)

Mapping of Questions and Course Outcomes

Q No	Question	Marks	Mapping with Cos, POs and PSOs	Blooms Taxonomy Level
Q.1	a) Construct an E-R diagram for the registrar's office. Document all assumptions that you make about the mapping constraints. Consider the following situation A university registrar's office maintains data about the following entities: • courses, including number, title, credits, syllabus, and prerequisites; • course offerings, including course number, year, semester, section number, • instructor(s), timings, and classroom; • Students, including student-id, name, and program; and • instructors, including identification number, name, department and title Further, the enrollment of students in courses and grades awarded to students in each course they are enrolled for must be appropriately modeled. b) While reducing E-R Model into tables, whether the table to be created for relationship or not is dependent on mapping cardinality between	5 5	CO1	VI-Create

	entity sets i.e decisions needs to be taken considering mapping cardinality is one to one, one to many, many to one or many to many. Explain in detail the decision taken during the above(Q1 b) situations. Write tables with their attributes c) Draw overall Database system architecture and explain storage manager, transaction manager and query processor.	5		
Q.2	a) Explain those levels of abstraction in detail. for following For the database system to be usable, it must retrieve data efficiently. The need for efficiency has led designers to use complex data structures to represent data in the database. Developers hide this complexity from the database system users through several levels of abstraction. b) Construct a ER diagram for college ERP system c) Explain rules to convert ER into tables and Convert above ER diagram into tables	5 5 5	CO1	II-Understand
Q. 3	a) Consider the following relational schema employee (empno,name,office,age) books(isbn,title,authors,publisher) loan(empno,isbn,date) Develop SQL Queries for following (Any 5) (i)Print the names of employees who have borrowed any book published by 'McGraw-Hill'. (ii)Print the names of employees who have borrowed all books published by 'McGraw-Hill'. (iii)For each publisher, print the names of employees who have borrowed more than five books (iv) Print employee name and borrowed book title whose age is less than 30 (v) Print employee details who borrowed books before March 2020. (vi) Print the date on which max books were borrowed b) Write PL/SQL trigger for following requirement: Event: Deletion of row from stud (roll_no, name, class) table. i) Action: after deletion of values from the stud table, values should be inserted into the cancel_admission (roll_no, name, class,date_of_cancel) table. ii) Action: after updating previous values from the stud table, values should be inserted into the update_admission (roll_no, name,class, date_of_update) table. Note: for every row to be deleted/updated, action should be performed. c) Write Pl/SQL block of code for following requirement: Student_fees(PRN,S_name,class,fees_paid) Write a procedure to Accept the PRN of the student from the user, check the fees paid by student, if fees paid is less than 30,000 then display the message on screen 'Not paid full fees', and display the total fees due. If fees_paid is greater than or equal to 30,000 then display message 'no fees due'.	5 5 5	CO2	III:Apply
Q. 4	a) Consider the schemas given below	5	CO2	III:Apply

	Emp(E_number,E_name,Dept_no) Dept(Dept_no,Dept_name) Consider above tables are created without considering the Dept_no as primary key in Dept table and foreign key in Emp table. Assuming tables are already created, write SQL queries for following requirements. i) Develop SQL query to Create primary key in dept table considering above situations ii) Develop SQL query to Create foreign key considering EMP as child table and Dept as master table also consider the above situation. iii) Develop SQL query to Add column salary with appropriate data type in EMP table. iv) Develop SQL query to find E_name and Dept_name of 'Computer Engg' and 'CSD Engg' department v) Develop SQL query to find Department names which are having average salary > 20,00,000 b) Write PLSQL block of code to check attendance status of student from student_att(roll,name,attendance) by accepting student roll, Display message for students having attendance less than 75% as 'Less Attendance' and prepare a separate table for students having attendance less than 75% c) Consider insurance database with following schema : person(driver-id, name, address) car(license, model, year) accident (report - no, date, location) owns(driver-id,license) participated(driver-id,car,report-no,damage-amount) Write a query in SQL for following requirements : i) Find the total no. of people who owned cars that were involved in accidents in 2016. ii) Retrieve the name of the person whose address contains Pune. iii) Find the name of persons having more than two cars. iv) Find the number of accidents in which the cars belonging to "Jayd Shah" were involved iv) Update the damage amount for the car with license number "AABB2000" in the accident with report number "AR2197" to $3000.	5 5		

Course Teacher
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