Department of Computer Science and Information Technology

**Assignment-5**

**DBMS**

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| **Q. No.** | **Question** | **CO** | **Bloom’s level** |
|  | Give the following queries in the relational algebra using the relational schema:  student(id, name)  enrolled(id, code)  subject(code, lecturer)   1. What are the names of students enrolled in cs3020? 2. Which subjects is Hector taking? 3. Who teaches cs1500? 4. Who teaches cs1500 or cs3020? 5. Who teaches at least two different subjects? 6. What are the names of students in cs1500 or cs307? 7. What are the names of students in both cs1500 and cs1200? | CO2 | L4 |
|  | What do you understand by ACID properties of transaction? Explain in details. | CO4 | L2 |
|  | Consider the following relation. The Primary key is Rollno, Isbn.  Student(RollNo, Name, Branch),  Book(Isbn, Title, Author, Publisher)  Issue(Rollno, Isbn, te\_of\_issue).  Write the query in SQL of the following:-  i) List the Roll Number and Name of All CSE Branch Student.  ii) Find the name of students who have issued a book of publication ‘BPB’.  iii) List the title and author of all books which are issued by a student name started with a.  iv) List the title of all books issued on or before 20/09/2012.  v) List the name of student who will read the book of author named ‘Sanjeev’. | CO2 | L4 |
|  | What are the different types of anomalies associated with database? | CO3 | L2 |
|  | What do you mean by serializability? Discuss the conflict and view serialzability with example. Discuss the testing of serializability also. | CO4 | L3 |
|  | Consider R = (A, B, C, D, E, F, G, H) and  F= { AB 🡪 C, BC 🡪 D, E 🡪 F, G 🡪 F, H 🡪 A, FG 🡪 H }  Is the decomposition of R into R1(A, B, C, D), R2(A, B, C, E, F), R3(A, D, F, G, H) lossless? Is it dependency preserving? | CO3 | L4 |
|  | Explain with suitable examples what are cascadeless and recoverable schedules? | CO4 | L2 |
|  | Consider R = (A, B, C, D, E) and  F= { A 🡪 B, BC 🡪 E, ED 🡪 A }  (a) List all the candidate keys for R.  (b) Is R in third normal form?  (c) Is R in BCNF? | CO3 | L4 |
|  | Consider the three transactions T1, T2, and T3, and the schedules S1 and S2 given below. Draw the serializability (precedence) graphs for S1 and S2 and state whether each schedule is serializable or not. If a schedule is serializable, write down the equivalent serial schedule(s).  T1: r1(X); r1(Z); w1(X);  T2: r2(Z); r2(Y); w2(Z); w2(Y);  T3: r3(X); r3(Y); w3(Y);  S1: r1(X); r2(Z); r1(Z); r3(X); r3(Y); w1(X); w3(Y); r2(Y); w2(Z); w2(Y);  S2: r1(X); r2(Z); r3(X); r1(Z); r2(Y); r3(Y); w1(X); w2(Z); w3(Y); w2(Y); | CO4 | L4 |
|  | What is Two phase Locking (2PL)? Describe with the help of example. | CO5 | L3 |