Database Management Systems – J Component Specification & Review Schedule

1. Choose a mini world for design and implementation of its database assigning an appropriate title for the database. (2)

2. Write down the data requirements and functional requirements for the database (*in approximately 1500 words*). The data requirements, apart from data to be stored in the database should also take into account the necessary integrity constraints that are reasonable for the database under consideration. The functional requirements should involve at least four different scenarios of removal of old data, four different scenarios for modification of existing data and eight different scenarios of data retrieval. (10)

3. Draw an ER/EER diagram based on the data requirements. Indicate key constraints, cardinality constraints and participation constraints on the diagram. (8)

4. Convert the ER/EER diagram into a relational database schema diagram. (10)

5. (a) Implement the relational database schema incorporating appropriate (based on data requirements) integrity constraints. Each integrity constraint should be assigned a name. (8 + 4)

(b) Enter necessary sample data (at least two rows into each table) into the tables and display the content of each table. (6 + 2)

6. Write down the necessary SQL statements for implementation of functional requirements (refer to **2**) through SQL select, delete and update statement. You may have to modify functional requirements to enable you write complex SQL statements. The SQL statements must include one query showing the usage of *nvl* function and *nullif* function, one join query involving order by clause, one uncorrelated nested query, one correlated nested query, one query involving one of the set operators, one query involving group by, having and where clause and one query involving (left or right or full) outer join. (20)

7. Define and implement two PL/SQL function involving cursor and two PL/SQL procedure involving cursor for the database under consideration (i. e. required for the project). (12)

8. Define three business rules appropriate for the database under consideration and implement the rules using trigger. (9)

9. Submission of the complete project document. (9)

Review schedule

Review I August 24, 25 & 26, 2020

Completion of steps 1, 2 & 3

Presentation & Submission of soft document (.pdf) through email (bimalkumarray@vit.ac.in)

Review II October 08, 09 & 10, 2020

Completion of steps 4 & 5

Presentation & Submission of soft document (.pdf) including content of review I through email

Review III October 28, 29 & 30, 2020

Completion of steps 6, 7, 8 & 9

Presentation & Submission of soft document (.pdf) of the entire project through email