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| Sr.No. |  | Marks |
| **Q.1** | (A) Multiple Choice Questions   1. Which SQL command is used to sort the result?   [A] ORDER BY [B] SORT BY [C] ORDER [D] SORT   1. INSERT is \_\_\_\_\_\_\_ SQL statement.   [A] DDL [B] DML [C] DCL [D] TCL   1. The following FDs A🡪B and BD🡪C imply which of the below options?   [A] A🡪C [B] D🡪C [C] AD🡪C [D] All   1. What is the default order of Order by Clause?  [A] Descending [B] None of the option given [C] Random [D] Ascending 2. Column with Unique Key cannot have duplicate values (True or False).   [A] True [B] False | **05** |
|  | **(B) Fill in blanks**   1. Partial Dependency is removed in \_\_\_\_\_\_\_\_ Normal Form. 2. \_\_\_\_\_\_\_\_ SQL keyword is used to fetch/retrieve only unique values. 3. \_\_\_\_\_\_\_\_\_ SQL command makes all changes made in a transaction permanent to the database. 4. Weak Entity Set is represented by \_\_\_\_\_\_\_\_\_ symbol in ER Diagram.   5. Minimal Super Key is known as \_\_\_\_\_\_\_\_\_ Key. | **05** |
| **Q.2** | **Attempt any four(Short Questions)** | **12** |
|  | (1) Give the disadvantages of file processing system. |  |
|  | (2) What are the three levels of abstraction? Draw neat and clean diagram to explain. |  |
|  | (3) Consider the database given by the following schemes.  ***Customer (Cust\_No, Sales\_ Person\_No ,City)***  ***Sales\_ Person(Sales\_ Person\_No ,Sales\_ Person\_Name, Common\_Prec,Year\_of\_Hire)***  Give an expression in SQL for each of the following queries:  Display the list of all customers by Cust\_No with the city in which each is located. |  |
|  | (4)What is the difference between TRUNCATE and DELETE command? |  |
|  | (5) Write necessary condition for 2NF. Give one example to explain. |  |
| **Q.3** | **Attempt any two** | **08** |
|  | (1) For a given relation R(ABC), FDs: {A->B, B->C, C->A} holds. R is getting decomposed into sub-relations R1(AB) and R2(BC).  (i) Check this decomposition is lossy or lossless?  (ii) Check this decomposition is dependency preserving or not? |  |
|  | (2) Consider given relation R (A, B, C, D, E, F, G, H) with functional dependencies (FDs): {AB->C, A->DE, B->F, F->GH}. Check, whether the given relation is in 2NF or not. If not, convert it into 2NF. |  |
|  | (3) Explain below mentioned SQL commands.  (i) commit  (ii) rollback  (iii) savepoint  (iv) grant |  |
| Q.4 | (A) Discuss Join Dependencies and Fifth Normal Form, and explain why 5NF? | 05 |
|  | (B) With relevant examples discuss the various operations in Relational Algebras. | 05 |
|  | OR |  |
|  | (B) What is aggregation in an ER model? Develop an ER diagram using aggregation that captures the following information :  Employees work for projects.  An employee working for a particular project uses various machinery.  Avoid unnecessary attributes. State any options you make. Also discuss about the ER diagram you have designed. | 05 |