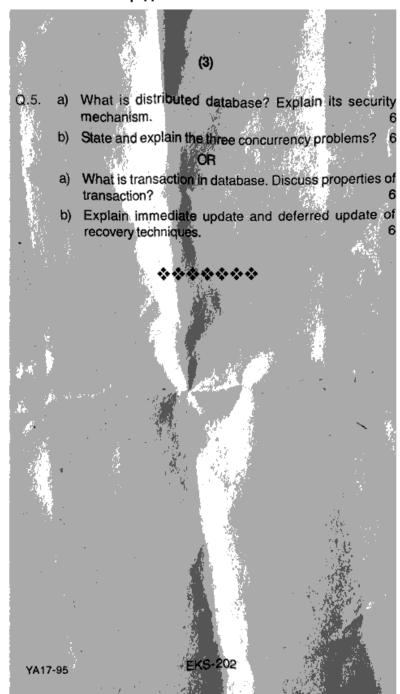
## Total No. of Printed Pages: 3 Total No. of Questions 168230132 EKS-202 B.E. III Semester (CGPA) CSE Exam. 2017 **DATABASE MANAGEMENT SYSTEM** Paper: CS-304 Time Allowed: Three Hours Maximum Marks: 60 Note: Attempt all questions. All questions carry equal marks Q.1. (a) What is DBMS and what are component of DBMS? What are the advantages of DBMS over file oriented approach. b) Explain the concept of physical data independence and its importance in database. Differentiate between two tier and three tier client/server architecture. b) What is the difference between procedural DML and nonprocedural DML. Draw an ER diagram for a small marketing company Q.2. database. Assume suitable data. What is entity and attribute? Explain the entity types.6 Explain about integrity constraints. Explain the various data models briefly with an example. YA17-95

|           | (2)  |
|-----------|--|
| Q.3. a)   | Differentiate between the  |
|           | Differentiate between relational calculus and Relational algebra?  |
| ( b)      | Explain the join operator, its relevance and its various types.  |
| 3         | ORVA MA AND  |
| a)        | Discuss the different techniques for optimising the queries.   |
| b)        | Consider the relations:  |
|           | City (city-name, state)  |
|           | Hotel (name, address)  |
|           | City-hotel (hotel-name, city-name, owner) answer the following queries in relational algebra:                    |
| 4         | i) Find the names and address of hotels in Agra.   |
|           | ii) List the name of cities which have no hotel.   |
|           |  |
| Q.4.   a) | Prove that a relation which is in 4NF must be in BCNF.   |
| (d        | Explain non loss decomposition and functional  |
|           | dependencies with example. 6   |
| aì        | Consider the universal relation 6  |
|           | R = {A, B, C, D, E, F, G H, I}   |
|           | and the set of functional dependencies   |
| 1 1 1 1 1 | $F = \{(A, B) \rightarrow C, A \rightarrow (D, E) B \rightarrow F, F \rightarrow (G, H), D \rightarrow (I, J)\}$ |
|           | What is the key for R? Decompose R into 2NF, then  |
|           | 3NF relations.   |
| b)        | Explain 3NF and BCNF with suitable example. 6  |
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