Pokhara University

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| Level: Bachelor | Semester: Fall | Year : 2013 |
| Programme: BE | | Full Marks: 100 |
| Course: Database Management System | | Pass Marks: 45 |
| Time : 3hrs. |

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| *Candidates are required to give their answers in their own words as far as practicable.* |
| *The figures in the margin indicate full marks.* |
| Attempt all the questions. |

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|  | 1. The DBA controls the security aspects of the DBMS implementation. Discuss the software and hardware controls available to the DBA, and how this could fit into a commercial environment. 2. What is super key and candidate key? Explain in brief about the structure of RDBMS. | 7  8 |
|  | 1. What do you mean by relational algebraic operators? Explain all the basic operators with examples. 2. Explain DDL and DML operations with suitable example. | 8  7 |
|  | 1. State and explain in brief about multi-valued and joined dependencies.   OR  What is normalization? State and explain in brief about 4th and 5th normal form with suitable example.   1. State ACID rules for concurrency control. Explain lock-based protocols. | 8  7 |
|  | 1. What is integrity violation? Discuss the security levels that can be applied in DBMS. 2. Define query optimization? Explain in brief about equivalence of expression. | 8  7 |
|  | 1. Explain the structure of Index sequential file with the help of a diagram. 2. What is stable storage? Explain in brief about shadow paging. | 7  8 |
|  | 1. What is transaction? Describe the dead lock handling mechanism. 2. Explain entity integrity and referential integrity. Also, give an example of each. | 8  7 |
|  | Write short notes on: (Any two)   1. Data Dictionary. 2. Distributed Model. 3. Denormalization. | 2×5 |