

- (b) Describe the problems of a distributed database.

**Unit-IV**

8. A mobile database is a database that can be connected by a mobile computing device over a mobile network. What are the requirements to have a mobile database? Name the tools supporting mobile database.

9. Write short notes on the following :

- (a) Mobile Databases  
(b) Digital Libraries.

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**M.B.A. 2 Yr. 3rd Sem. (N.S.)**

**Batch 2011-2013**

**Examination- December, 2016**

**Database Management System**

**Paper-MBA-315**

**Time : 3 hours**

**Max. Marks : 50**

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

**Note :** Section-A is compulsory. Attempt one question from each unit in Section-B. All questions carry equal marks.

**Section-A**

1. (a) What is data independence? Describe its different types.  
(b) State the advantages of normalization.

- (c) When is a transaction said to be deadlocked?
- (d) Explain the advantages of DBMS.
- (e) What is concurrency?

**Section-B**

**Unit-I**

- 2. What is the hierarchical database model? Discuss the major advantages and disadvantages of the Hierarchical database model.
- 3. Discuss the functionality of each component of Object oriented DBMS.

**Unit-II**

- 4. (a) Define 3NF, BCNF. Give an example of a relation that is in 3NF but not in BCNF.  
(b) Given the following set of Functional Dependencies, find the minimum set of

3NF relations. Designate the candidate key attribute of these relations. Is the set of relations you derived, also BCNF?  
A → BCDEF, AB → CDEF, ABC → DEF, ABCD → EF, ABCDE → F, B → DG, BC → DEF, BD → DEF, E → BF

- 5. Explain how logical and physical data independence is achieved by having a three level architecture for DBMS.

**Unit-III**

- 6. What is distributed database? What are the components of a distributed database system? Explain with the help of a diagram.
- 7. (a) Write short notes :

- (i) Central and distributed databases
- (ii) Deadlock prevention and recovery