Distributed Information Systems: Spring Semester 2015

Quiz 1: Overview on Distributed Information Systems

Student Name: _____ Date: 26 Feb 2015

Student ID: _____ Time: 11:15AM to 11:30AM

Total number of questions: 8

Each question has a single answer!

1. Which data management technique **cannot** be used to reduce communication costs?

   ☐ *a*) Data partitioning ☐ *b*) Data replication ☐ *c*) Data caching ☒ *d*) None of them

2. Which one of the following terms is an abstraction used in transaction management?

   ☒ *a*) Isolation ☐ *b*) Homomorphism ☐ *c*) Autonomy ☐ *d*) Privacy

3. Which of the following tasks does **not** describe an interaction to real world from the perspective of an information system?

   ☐ *a*) Control ☒ *b*) Retrieval ☐ *c*) Monitoring ☐ *d*) Evaluation

4. The design of a relational database schema is made at which of the following levels?

   ☐ *a*) Physical ☒ *b*) Logical ☐ *c*) Conceptual ☐ *d*) Pragmatic

5. Which of the following implementations **cannot** be an implementation of the abstract data structure *associative array*?

   ☐ *a*) Tries
   ☐ *b*) XML trees
   ☐ *c*) Hash tables
   ☒ *d*) They can all implement it.

6. Which of the following statements is correct?

   ☐ *a*) Users of different information systems can easily interpret each other's models.
   ☐ *b*) Peer-to-peer systems provide high-quality information due to more data available.
   ☐ *c*) Interoperability between semantically heterogeneous information systems is not possible.
   ☒ *d*) The same data can be represented using different data models.

7. Consider that you want to withdraw money from an ATM machine. Which of the following cases represent an atomic transaction?

   ☐ *a*) You withdraw the money, but the money is not deducted from your account.
   ☐ *b*) You are not able to withdraw the money, but it is deducted from your account.
   ☒ *c*) You are not able to withdraw the money, and nothing is deducted from your account.
   ☐ *d*) You withdraw half of the money, but the total amount is deducted from the account.

8. Which of the following is true?

   ☐ *a*) Ontologies are standard languages used to overcome syntactic differences among different data models.
   ☐ *b*) Two different databases cannot be represented using the same database schema.
   ☐ *c*) SQL and XML are both examples of database management systems.
   ☒ *d*) Schema mapping tools are used to integrate heterogeneous databases.