Distributed Information Systems: Winter Semester 2012/2013

Quiz 1: Overview on Distributed Information Systems

Student Name: _____ Date: 25 Sep 2012

Student ID: _____ Time: 9:50AM to 10:05AM

Total number of questions: 8

Each question has a single answer!

---

1. The task of modeling the real-world to an information system corresponds to the:

   ☒ *a*) Semantic layer
   ☐ *b*) Syntactic layer
   ☐ *c*) Physical layer
   ☐ *d*) None of them

2. Indexing techniques are often used in database systems to:

   ☐ *a*) Reduce data storage
   ☒ *b*) Speed up query processing
   ☐ *c*) Speed up the insertion of new data
   ☐ *d*) All of them

3. In an heterogeneous information system, which technique is used to overcome semantic heterogeneity?

   ☐ *a*) Mapping all data to a common data model, such as XML.
   ☒ *b*) Using a common representation of the world, called ontology.
   ☐ *c*) Using a decentralized information dissemination mechanism, such as gossiping.
   ☐ *d*) Using a distributed transaction management mechanism.

4. While indexing the words of the sentence "*This is how heavy this hovercraft would be*" using a trie, what would be the height of the resulting trie, including the root?

   ☐ *a*) 2 ☐ *b*) 3 ☒ *c*) 4 ☐ *d*) 5

5. Which of the following modeling techniques requires human intervention:

   ☐ *a*) Database and data mining approaches
   ☐ *b*) Database and information retrieval approaches
   ☐ *c*) Data mining and information retrieval approaches
   ☒ *d*) Data mining, database, and information retrieval approaches

6. Which of the following relationships is not managed within an information system:

   ☐ *a*) Relationship between a logical and physical schema
   ☐ *b*) Relationship between two heterogeneous schemas
   ☐ *c*) Relationship between a conceptual schema and its real-world interpretation
   ☒ *d*) Relationships represented as relations in a relational database schema

7. When trying to overcome semantic heterogeneity, which of the following mappings can be used?

   ☐ *a*) Mapping through standards
   ☐ *b*) Mediated mapping
   ☐ *c*) Direct mapping
   ☒ *d*) All of them

8. What are the characteristics of information dissemination performed via Gossiping?

   ☒ *a*) Control: push, Event: ad-hoc, Communication: multicast
   ☐ *b*) Control: push, Event: periodic, Communication: broadcast
   ☐ *c*) Control: pull, Event: ad-hoc, Communication: multicast