

Total No. of Questions : 10]

SEAT No. :

P3354

[4758] - 576

[Total No. of Pages : 4

T.E. (Computer Engg.)

DATABASE MANAGEMENT SYSTEMS APPLICATIONS

(2012 Course)

Time : 3 Hours]

[Max. Marks : 70

Instructions to the candidates :

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.*
- 2) Neat diagrams must be drawn wherever necessary.*
- 3) Figures to the right side indicate full marks.*
- 4) Assume suitable data, if necessary.*

Q1) a) Explain R database model with suitable example. **[5]**

b) Compare SQL and NOSQL databases. **[5]**

OR

Q2) a) Define Transitivity dependency. Explain third normal form with suitable example. **[5]**

b) Explain view and Index objects in SQL with example. **[5]**

Q3) a) Explain Distinct between the terms serial schedule and serializable schedule with suitable example. **[5]**

b) Explain MongoDB data modeling with suitable example. **[5]**

OR

Q4) a) Describe croud-sourcing in MongoDB. **[5]**

b) Explain different concurrency protocols in Database management systems. **[5]**

P.T.O.

- Q5)** a) Explain 3- tier web architecture with diagram for online shopping database system. [5]
- b) Explain database administration in MongoDB. [5]
- c) Describe Cassandra database architecture. [7]

OR

- Q6)** a) Describe advantages of Homogeneous and Heterogeneous distributed databases. [5]
- b) Explain speedup and scale up in parallel databases in detail. [5]
- c) Explain Database Connectivity using MongoDB with suitable Example. [7]

- Q7)** a) Consider following DTD for bid [7]

<?xml version= "1.0" encoding="UTF-8"?>

<!ELEMENT bids (bid_tuple*)>

<!ELEMENT bid_tuple (userid, itemno, bid, bid_date)>

<!ELEMENT userid (#PCDATA)>

<!ELEMENT itemno (#PCDATA)>

<!ELEMENT bid (#PCDATA)>

<!ELEMENT bid_date (#PCDATA)>

Create XML document, XML Schemas and solve the following queries in XQuery.

- i) List the item number and description of the item(s) that received the largest number of bids, and the number of bids it (or they) received.
 - ii) List item numbers and average bids for items that have received three or more bids, in descending order by average bid.
- b) Write a short note on [10]
- i) JSON
 - ii) Hive

OR

- Q8)** a) Consider following DTD for bibliography [7]

<!ELEMENT bib (book*)>

<!ELEMENT book (title, (author+ | editor+), publisher, price)>

<!ATTLIST book year CDATA #REQUIRED >

<!ELEMENT author (last, first)>

<!ELEMENT editor (last, first, affiliation)>

<!ELEMENT title (#PCDATA)>

<!ELEMENT last (#PCDATA)>

<!ELEMENT first (#PCDATA)>

<!ELEMENT affiliation (#PCDATA)>

<!ELEMENT publisher (#PCDATA)>

<!ELEMENT price (#PCDATA)>

Create XML document, XML Schemas and solve the following queries in XQuery on the bibliography fragment.

- i) List books published by Addison-Wesley after 1991, including their year and title.
 - ii) Find pairs of books that have different titles but the same set of authors (possibly in a different order).
- b) Write a short note on : **[10]**
- i) Map Reduce in Hadoop
 - ii) Cloudera
- Q9)** a) Explain BIS Components in detail **[5]**
- b) Explain Recommendations algorithm in detail. **[5]**
- c) Define Association Rule Mining. Explain Apriori Algorithm with suitable example. **[6]**

OR

- Q10)** a) Explain Regression analysis in data mining with suitable example. **[5]**
- b) Define data Mining. Explain decision Tree classification algorithm with suitable example. **[5]**
- c) Explain ETL Data Warehouse. **[6]**

