Total No. of Questions :10]

SEAT No. :

P1751

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T.E. (Computer Engg.)

DATABASE MANAGEMENT SYSTEMS APPLICATIONS

(2012 Course) (Semester - I)

Time : 2½ Hours] *[Max. Marks :70*

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data, if necessary.***

Q1) a) Explain the distinctions among the terms primary key, candidate key, and super key. **[5]**

b) Explain the concept of specialization & generalization in E-R Model using suitable example. **[5]**

OR

Q2) a) Explain wide column store data model of NOSQL databases. **[5]**

b) Differentiate between Relational database & NOSQL database. **[5]**

Q3) a) Consider relational schema **[5]**

Customer (cname, ccity, phone)
Loan (lno, branch_name, amount)
Borrower (cname, lno)
Depositor (cname, accno)
Branch (bname, bcity)
Account (bname, accno, bal)

Write SQL queries for following requirements (Any two):

i) Find out average account balance at each branch.
ii) Find all customers who have both account and loan at the bank.
iii) Find average account balance at Shivajinagar branch.

b) Write short note on performance tuning & query optimization of NOSQL database. **[5]**

OR

P.T.O.

Q4) a) Write short note on crowd sourcing. **[5]**

b) What is recoverable schedule? Why is recoverability of schedule is desirable? **[5]**

Q5) a) What is speedup and scale up attributes in parallel database architectures? Explain the different factors affecting the speedup and scaleup attributes. **[8]**

b) Compare 2-tier and 3-tier client server architecture with suitable example. **[8]**

OR

Q6) a) Explain different steps required for JAVA to SQl database connection using JDBC. **[8]**

b) Explain distributed database system architecture. **[8]**

Q7) a) Consider the requirements of library having following elements **[7]**

students (roll_no, name, class)

Teachers (ID, Name, department)

Book (Acce._No, Title, author, publisher)

write a XML DTD for above elements.

b) Write short note on: **[10]**

i) HBASE

ii) HIVE

OR

Q8) a) List & explain advantages of using XML Schema over XMLDTD. **[7]**

b) Explain in brief different building blocks of HADOOP. **[5]**

c) Write short note on Querying XML data. **[5]**

Q9) a) Explain with neat diagram different components of data warehouse. **[5]**

b) Write short note on Data-mining association rules. **[5]**

c) Explain Recommendation algorithm. **[7]**

OR

*Q10)*a) What is data mining clustering? Explain how knowledge can be extracted from databases using Data Mining clustering. **[5]**

b) Explain in brief different BIS components. **[5]**

c) Write short note on Data-mining regression analysis. **[7]**