Total No. of Questions : 5]

PA-2559

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M.C.A. - I (Management)
IT - 24 : ADVANCED DBMS
(2020 Pattern) (Semester - II)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:
1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*

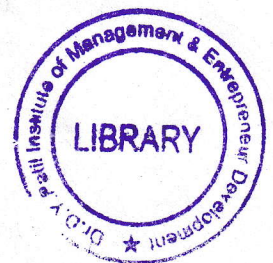**Q1)** Write correct option or fill in the blanks of following questions (each ½ marks)

[10]

a) Part of entire database is shown by_____ level of abstraction.
   i) Physical
   ii) Conceptual
   iii) View
   iv) Logical

b) Schema Definition is written by____
   i) Database Administration
   ii) Application Developer
   iii) Storage manager
   iv) Database manage

c) What is the aim of NOSQL____
   i) Not suitable for storing structured data
   ii) Allow storing non-structured data
   iii) New data format to store large datasets
   iv) An alternative to SQL database to store textool data

d) Normalization is a process of restructuring a relation to_____
   i) Minimize duplication of data in a database
   ii) Maximize duplication of data in a database
   iii) Make it of uniform size
   iv) allowaddition of data

e) Arelation is said to be 3-Nf if which of the following is/are ture_____
   i) No partial key dependencies
   ii) All attributes are atomic
   iii) No presence of transitive dependencies
   iv) All of the mention

f) What are the ACID properties of a transaction_____
   i) Atomicity, consistency, Isolation, Database
   ii) Atomicity, consistency, Isolation, Durability
   iii) Atomicity, consistency, Inconsistence, Durability
   iv) Atomically, concurrency, Isolation, Durability

P.T.O.

g) Which of the following are the simplest NOSQL database_____
   i) Key-Value   ii) Wide Column
   iii) Document   iv) All of the mention

h) The initial State of a transaction is known as_____
   i) Active   ii) Failed
   iii) Aborted   iv) Partial committed

i) NOSQL database is used mainly for handling large volumes of_____data
   i) Unstructured   ii) Structured
   iii) Semi-structured   iv) All of the above

j) Which of the following is not NO-SQL database?
   i) Cassandra   ii) MongoDB
   iii) SQL server   iv) None of the above

k) When has partitioning is a better choice than range partitioning_____
   i) Dont know beforehand how much data will map into a given range
   ii) Size of range partitions would differ Quite substaintially
   iii) Partition pruning and partition-wise joins on a partitioning attributes are important
   iv) All of the mentioned

l) The core principle of NOSQL is_____
   i) high availability   ii) low availability
   iii) Both high & low availability   iv) None of above

m) Which of the following is not parallel database arechitecture?
   i) Shared memory   ii) Shared processor
   iii) Shared Disk   iv) Shared Nothing

n) In which state, the transaction will wait for the final statement has been executed_____
   i) Active
   ii) Failed
   iii) aborted
   iv) Partial Committed

o) A SQL query with location transparency needs to specify
   i) Fragment   ii) locations
   iii) local formates   iv) all of the above

p) _____is an essential part of any backup system.
   i) Filter   ii) recovery
   iii) Scalability   iv) Security

q) In log based recovery, the log is sequence of_____
   i) Filter   ii) records
   iii) block   iv) numbers

r) _____ deals with individual transactions.

   i) Isolate transactions   ii) transaction recovery

   iii) system recovery   iv) media recovery

s) Public-key cryptography is also known as _____

   i) Asymmetric   ii) Symmentric

   iii) Both (i) & (ii)   iv) None of the above

t) A schedule in which each transaction is executed atomically is called a _____

   i) Non- serial schedule   ii) Serial schedule

   iii) parallel schedule   iv) Non-parallel schedule

Q2) Case study:

Organisation made up to various department, each having a name. identifying no. and an employee who is the manager. A department may be located in different places. Information about employee includes name, identification number, birth date, address, sex, & salary. Each employee is assigned to one department, the date the manager is appointed to a department is also tracked. Employees may be directly supervised by another employee. Each project within the organization is controlled by a department employees (not necessrily from the controlling dept). are assigned to projects. Information about project includes project name, no, and location hours spent by employees on each project are also kept.

Draw the E-R diagram for the above system & explain the notations & relationship. **[10]**

OR

What is concurrency control? Explain all protocols in concurrency control. **[10]**

Q3) a) Describe the three- schema architecture. **[5]**

b) Compare RDBMS, OODBMS with at least 5 points. **[5]**

OR

a) What are the characteristics of the DBMS. Explain data independency. **[5]**

b) Explain the multimedia database with its architecture. **[5]**

Q4) a) What do you mean by log-based recovery. Explain with example. **[5]**

b) What is difference between Discretionary access control & manadatory access control. **[5]**

OR

a) What are different types of database backups & explain any one. **[5]**

b) Write short note on Grant & revoking privileges. **[5]**

Q5) a) What is Distributed database system? Explain the data Replication & Data fragementation. **[10]**

OR

b) Explain Inter- Operational & Intra- operational parallelism in details. **[10]**

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