Total No. of Questions : 5]

SEAT No. : ____

P-3346

[Total No. of Pages : 5

[6027]-24
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 the correct option or fill in the blanks of the following questions (each ½ mark) **[20 × ½ = 10]**

i) If in redundant file common fields are not matching then it result in _____.

a) Inconsistency b) Duplication

c) Data Isolation d) Data integrity problem

ii) Ability to change the internal schema without affecting the conceptual schema to achieve _____ data Independence.

a) Logical b) Physical

c) Analytical d) Conceptual

iii) What is the aim of NoSQL _____.

a) Not suitable for storing structural data

b) Allow storing non-structural data

c) New data format to store large dataset

d) An alternative to SQL databox to store textual data

P.T.O.

iv) Normalization is a process of restructuring a relation to _____.

a) Minimize duplication of data in database

b) Maximize duplication of data in database

c) Make it of uniform size

d) Allow addition of data

v) When a relation is in 2NF and there is _____ it is in 3NF

a) Transition Dependency

b) No Transition Dependency

c) Relational Dependency

d) No Relational Dependency

vi) A schedule is _____ is it is conflict equivalent to a serial schedule

a) Conflict serraziable b) Conflicting

c) Non serraziable d) None of the mentioned

vii) Which of the following are simplest NoSQL databases _____.

a) Key value b) Wide column

c) Document d) All of the mention

viii) The Transaction can be read as well as the writes the data item with a _____ lock.

a) Shared b) Exclusive

c) Read d) Write

ix) NoSQL database are is used mainly for handling large volume of _____ data.

a) Unstructured b) Structured

c) Semi Structured d) All of the above

x) Which of the following is not NoSQL database?

a) Cassandra b) Mongi DB

c) SQL server d) None of the above

xi) The Architecture that is easy to load balance is

a) Shared disk Architecture

b) Shared Nothing Architecture

c) Shared Memory Architecture

d) None of the above

xii) The core principle of NoSQL is

a) High availability

b) Low availability

c) Both high and Low availability

d) None of above

xiii) The method of synchronizing concurrent task is

a) Synchronization b) Locking

c) Speed up d) None

xiv) 2 phase Locking which includes growing phase and _____.

a) Shrinking phase b) Release phase

c) Commit phase d) Aquire phase

xv) A sql query with location transparency needs of specify _____.

a) Fragment b) Location

c) Loctal formats d) All of the above

xvi) Roll back of transaction is normally used to

a) recover from Transaction failure

b) update the transaction

c) retrieve old records

d) repeat a transaction

xvii) In log based recovery, the log in sequence of _____.

a) filter b) records

c) block d) numbers

xviii) Which of the following in not a recovery Technique _____.

a) Deferred updates b) Immediate updates

c) Two phase commit d) Recovery Management

xix) In cryptograph, what is cipher

a) Algorithm for performing encryption & decryption

b) Encrypted manage

c) Both (a) and (b)

d) Decrypted Manage

xx) A Schedule in which each transaction in Execution automatically is called a _____.

a) Non-serial schedule b) Serial schedule

c) Parallel schedule d) Non parallel schedule

Q2) Draw ERD and Design normalized database design.

The company database keeps track of employee, department and project. We store employee name, SSN, address, salary gender, date of birth, age. An Employee assigned to one department, but may work on several projects which are not necessary controlled by the same department. A particular employee manages the department. Each department has unique name, unique number and several locations. The department controls no. of projects each of which has a unique name and number. We want to keep track of the dependents of each employee for insurance purpose. We keep each dependent first name, sex, birth date and relationship of employee. **[10]**

OR

Define transaction with examples. Explain different states of transactions in detail with diagram. **[10]**

Q3) a) What are the problems of traditional file system? How it is overcome by using DBMS. **[5]**

b) Explain multimedia Database architecture. **[5]**

OR

a) What is Data Independence? Explain it's type with proper diagram. **[5]**

b) What is spatial and temporal database in DBMS. **[5]**

Q4) a) Explain the term shadow paying. **[5]**

b) Discuss the importance of encryption and public key Infrastructure in detail. **[5]**

OR

a) What is Log based recovery? Discuss the deferred and immediate database modifications. **[5]**

b) Describe the theory of discretionary occur control based on granting and revoking privileges. **[5]**

Q5) Explain Inter-operational and Intra - operational parallelim with suitable example. **[10]**

OR

State two phase commit protocol. Discuss the implications of a failure of the coordinator of some Participants. **[10]**