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RETEST EXAMINATION
NOVEMBER – 2019

Semester : 5th (Old)

Subject Code : CO-501

DATABASE MANAGEMENT SYSTEMS

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Instructions :

1. Questions on PART–A are compulsory.
2. Answer any *five* questions from PART–B.

PART – A

Marks – 25

1. Fill in the blanks : 1×10=10

   (a) ACID in DBMS stands for _____.

   (b) On successful completion of a transaction it reaches the _____ state.

   (c) Database is a collection of related _____.

[Turn over

(d) RDBMS stands for _____.

(e) Data about data is known as _____.

(f) Participation of an entity in a relationship can be _____ or _____.

(g) DDL stands for _____.

(h) The security mechanisms could be mandatory or _____.

(i) Relational model is an example of _____ data model.

(j) Two types of recovery mechanisms are immediate update and _____ update.

2. Write true or false : 1×10=10

(a) In an E-R diagram strong entity is represented by double rectangle.

(b) Degree of a relation represents the number of entities participating in a relation.

(c) BCNF is weaker than 3NF.

(d) GRANT command is used for access control.

(e) Wait die is a deadlock prevention protocol.

(f) Tuple represents a column in a table.

(g) Query compiler is not a part of the database system.

(h) Binary locking can never lead to deadlock.

(i) A candidate key can never be a primary key.

(j) A database represents the real world.

3. (a) A snapshot of the database state at a particular point of time is known as

(i) data (ii) schema

(iii) instance (iv) None of these

(b) In E-R diagram a double oval represents _____ attribute.

(i) derived (ii) multi-valued

(iii) composite (iv) None of these

(c) 3NF is based on

(i) Functional dependency

(ii) Full functional dependency

(iii) Multi-valued dependency

(iv) Transitive dependency

(d) An entity can be

(i) real

(ii) conceptual

(iii) Both (i) and (ii)

(iv) None of these

(e) Program-data independence is a feature of

(i) traditional file processing

(ii) database approach

(iii) Both (i) and (ii)

(iv) None of these.

PART – B

Marks – 45

4. (a) State the disadvantages in file processing. 3

(b) Define data model. 2

(c) What is a view ? State the syntax to create a view. 2+2=4

5. (a) Differentiate between single valued and multi-valued attribute with examples. 3

(b) Define primary key and foreign key. 2+2=4

(c) State in brief the purpose of system log. 2

6. (a) Define the purpose concurrency control. 2

(b) Explain the shared locking technique in relation to concurrency control. 3

(c) List the different states of a transaction and draw the state transition diagram of a transaction. 1+3=4

7. (a) Consider the following tables :

EMP – Ecode, Ename, Age, Address, Contact, Dnum

DEPT – Dname, Dno., Dloc

Write SQL queries to retrieve the following :

(i) Employees who are above 55 years.

(ii) Employees who work for Computer department.

(iii) Contact number of those employees whose Dloc is Guwahati. 1+2+2=5

(b) Explain the terms fragmentation and replication. 3

(c) What is a distributed database ? 1

8. (a) Define the term constraint. Write about the different integrity constraints applicable in creating a database. 1+5=6

(b) Explain any three properties of transaction. 3

9. (a) Explain the three schema architecture and the concept of data independence. 3+3=6

(b) Explain first and second normal form. 3

10. Write short notes on any *three* : 3×3=9

(a) Deadlock and starvation

(b) Functional dependency

(c) DBMS classification

(d) DBA

(e) DBMS interfaces.