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MCA–202

M. C. A. (Second Semester)
EXAMINATION, June, 2012

(Grading/Non-Grading)

DATABASE MANAGEMENT SYSTEM

(MCA – 202)

Time : Three Hours

Maximum Marks : $\begin{cases} GS : 70 \\ NGS : 100 \end{cases}$

Note : Attempt *one* question from each Unit. All questions carry equal marks.

Unit – I

1. (a) List significant differences between a file processing system and a DBMS.

   (b) Explain the difference between a weak and a strong entity set with suitable example.

Or

2. (a) Differentiate DDL and DML with suitable examples.

   (b) Define the concept of aggregation. Give *two* examples of where this concept is useful.

Unit – II

3. (a) Define foreign key. What is this concept used for ?

P. T. O.

(b) What is Union Compatibility ? Why do the union, intersection and difference operation require that relation on which they are applied be union compitable ?

Or

4. (a) What is the difference between key and a super key ? Why are duplicate tuples not allowed in a relation ?

(b) Explain different types of OUTER Join with examples.

Unit – III

5. (a) Define Boyce-Codd normal form. How does it differ from 3NF ?

(b) Consider the following two sets of FD :

$F = \{A \rightarrow C, AC \rightarrow D, E \rightarrow AD, E \rightarrow H\}$ and

$G = \{A \rightarrow CD, E \rightarrow AH\}$

Check whether they are equivalent.

Or

6. (a) Explain Fourth normal form with suitable example.

(b) Write algorithm for computing closure of attribute sets. Explain its uses also.

Unit – IV

(a) List the ACID properties. Explain the usefulness of each.

(b) What are the approaches to storing a relation in the distributed database ?

Or

8. (a) Explain conflict serializability with suitable example.

(b) When is it useful to have replication or fragmentation of data ? Explain your answer.

Unit – V

9. (a) What is Data Warehouse ? How is it differ from DBMS ?

(b) Differentiate B-tree and B+-tree.

Or

10. Write short notes on any *two* of the following :

(a) Data mining

(b) Object oriented database

(c) RAID

(d) Similarity based retrieval